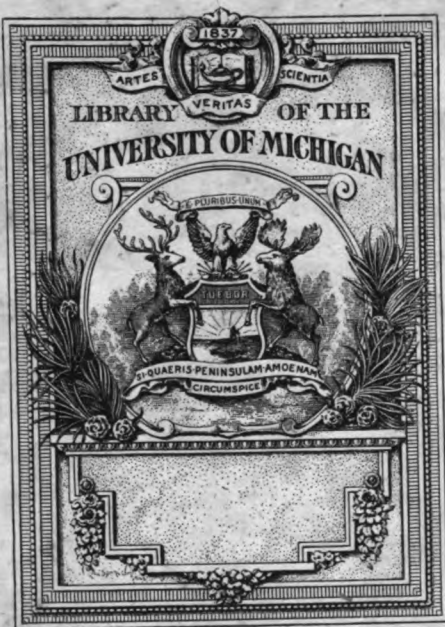

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THE PRINCIPLES
OF
SOUND AND INFLEXION

KING AND COOKSON

London
HENRY FROWDE



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THE PRINCIPLES OF
SOUND AND INFLEXION

AS ILLUSTRATED IN THE
GREEK AND LATIN LANGUAGES

BY

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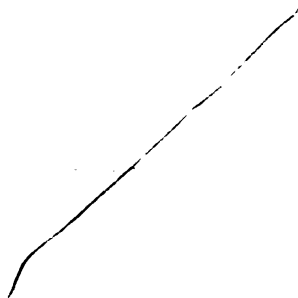
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PREFACE.

MUCH progress has been made of late years in the comparative study of the Greek and Latin languages which is not adequately represented in English text-books. Accordingly, at the suggestion of the High Master of St. Paul's School, and encouraged by the advice of so great an authority, we have endeavoured to summarise the results of recent research in this subject. It has been our aim to give a clear statement of the laws under which the changes of sound may be grouped and to furnish the necessary illustration of those changes within the limits of ancient Greek and Latin. We have throughout attempted to distinguish between those results which may be regarded as certain, and those which are only probable. In the second part of the book, which deals with the morphology of Greek and Latin, we are sensible that much still remains to be learnt, and that some of the laws and explanations there stated must be taken as representing the stage which the inquiry has now reached rather than as being completely certain. This is especially the case with Latin morphology.

We have in great part followed the plan, and embodied much of the material of the articles of Brugmann and Stolz in Iwan Müller's *Handbuch der klassischen Alterthumswissenschaft*. The larger work of Brugmann, *Grundriss der vergleichenden Grammatik*, appeared too late for us to use it to full advantage, but we have, wherever possible, consulted

it. We are also greatly indebted to the articles and publications of Collitz, Havet, Hübschmann, Osthoff, Schmidt, and Wackernagel, and especially to De Saussure's remarkable work *Le système primitif des voyelles indoeuropéennes*. Of English books we have made full use of Mr. Monro's *Homeric Grammar*, which marks an era in the study of Greek Grammar in England, and of Dr. Rutherford's *New Phryniclus*, and have consulted with advantage Mr. Sweet's *Handbook of Phonetics*, and Mr. Wharton's *Etyma Graeca*. We are also much indebted to Mr. Maurice Bloomfield's articles in the *American Journal of Philology*.

Our best thanks are due to the Rector of Lincoln for his valuable help in the labour of correcting the proofs, as well as to other friends who have in different ways assisted us. In compiling the indexes we have received much help from our old pupils, Messrs. Alexander and Hall, of Trinity, and Mulvany, of Magdalen. Above all we desire most gratefully to express our deep sense of obligation to the Provost of Oriel, who has so generously given us his time in reading and correcting our MS. and proof, and whose learning has enriched the book with many valuable suggestions.

J. E. K.
C. C.

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We subjoin a list of the Works which we have most frequently consulted, and the Editions employed, to which are prefixed the abbreviations used in the text.

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TABLE OF CONTENTS.

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The References are to pages.
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PART I.—PHONOLOGY.

CHAPTER I.

INTRODUCTION.

The Comparative Study of Language, 1.—Importance of Sanskrit, 3.—Grammar in Sanskrit and Greek, 4.—Franz Bopp, 5.—His views of Inflection compared with Schlegel's, 6.—Theory of Agglutination, 7.—Jakob Grimm, 10.—A. W. Pott, 10.—August Schleicher, 11.—Reconstructions of the *Ursprache*, 11, 12.—Georg Curtius, 13.—Old and New methods of studying language, 14.—The theory of Phonetic Law, 15.—Analogy, 19.—Origin of word-forms, 23.—Summary, 25.

CHAPTER II.

THE INDO-EUROPEAN LANGUAGES.

Mutual relations of the I.-E. languages, 26.—Indian, Iranian, and Armenian families, 27.—Greek (and its dialects), 28, 29.—Albanian, 30.—Italian family, Latin, 30.—Umbrian, 31.—Oscan, 32.—Graeco-Italic hypothesis, 33.—Celtic, Teutonic, Baltic, Slavonic families, 34.—Schleicher's genealogical tree, 35.—Schmidt's Wave-theory, 36.—Mutual relations of the Greek dialects, and of Greek and Latin, 37, and of Latin and Romance, 38.—Morphological Classification: Inflectional, 38, Radical and Agglutinative languages 39.

CHAPTER III.

SOUNDS AND THEIR CLASSIFICATION.

Sounds and their symbols, 41.—Living and dead languages, 42.—The nature of Sound; the organs of Speech, 43.—Distinction of Vowels and Consonants, 44.—Classification of sounds, 45.—Classification according to place of articulation, 46.—Classification of Vowels, 46;—of Consonants, 47.—Tenues and Mediae, 48.—Labials, 48.—Dentals, Palatals, Gutturals,

49. — Classification according to form of articulation, 49. — Voiced and Voiceless consonants, 49. — Glides, 50. — Alphabets, 50. — Phoenician and Greek, 51. — Roman Alphabet, 54. — Sanskrit Alphabet, 55. — Indo-European Alphabet, 56. — The original vowels; theory of Curtius, 56. — Liquid and Nasal Sonants, 57. — Palatal and Velar Gutturals, 58. — E and O primitive vowels, 59.

CHAPTER IV.

THE SIMPLE VOWEL-SOUNDS.

Indo-European *ā* in Greek and Latin, 60. — Indo-European *ā*, 63. — Indo-European *ē*, 64. — Indo-European *ē*, and Indo-European *ō*, 67. — Indo-European *ō*, 68. — The Indeterminate Vowel, 69. — Balancing power of *l* in Latin, 71. — Irregular correspondence of the simple vowels in Greek and Latin, 72. — The simple vowels in Greek dialects, 74.

CHAPTER V.

DIPHTHONGS AND SEMIVOWELS.

Glides and transitional sounds; Diphthongs, 77. — Proper and improper diphthongs; variation in quantity, 78. — Indo-European *ai*, *au*, *ei* in Greek and Latin, 79. — Indo-European *eu*, *oi*, 80. — Other diphthongs in Greek, 81. — Pronunciation of diphthongs and their history in Greek, 82. — Long diphthongs, 83. — Short diphthongs, 84. — History of the diphthongs in Latin, 85. — The Semivowels; in roots, 89. — Liquid sonants, 90. — Nasal sonants, 91. — Indo-European *i*, *ī*, in Greek and Latin, 93. — Indo-European *ū*, *ū*, 94. — The semivowels as Consonants in Greek, 94; in Latin, 97. — The liquid sonants in Greek Verbal formations, 98; in Nominal formations, 102. — Liquid sonants in Latin, 103. — The nasal sonants, 105. — In Verbal formations, 106; in Nominal formations, 108; in suffixal syllables and terminations, 109–112. — Miscellaneous instances, 112. — Double sonants, 113. — Long sonants, 114. — Long liquid sonants, 115. — Long nasal sonants, 116.

CHAPTER VI.

THE GUTTURALS.

Mutes or Explosive Sounds, 117. — The distinction between palatal and velar gutturals, 118. — Sanskrit gutturals, 119. — Sanskrit *a* and European *e*, 120. — The velar gutturals in Western languages, 121; in Eastern languages, 122. — Their representation in Sanskrit, Greek, and Latin, 122. — Representation of the palatals in Sanskrit, Greek, and Latin, 123. — Labialisation, 123. — Indo-European *g* in Sanskrit, Greek, and Latin, 124. — Velar *g*, labialised, 127; before *e*, *i*; before *o*, 128–130. — Representation of the hard velar guttural in Greek and Latin, 131. — The hard palatal *ḱ* in Sanskrit, Greek,

and Latin, 132. — The soft velar guttural *g*; unlabialised, 134; labialised, 135; before *e* and *i*, 136. — The soft palatal *ǵ*, 137. — Confusion of palatals and velars, 138. — Velars in Latin; velar *g*, 139; velar *g*, 141. — The aspirated velar guttural in Sanskrit, Greek, and Latin; unlabialised and labialised, 142. — The palatal aspirate in Sanskrit, Greek, and Latin, 143. — The aspirated gutturals in Latin, 144, 145.

CHAPTER VII.

THE DENTAL, LABIAL, LIQUID AND NASAL CONSONANTS.

The hard dental *t* in Greek and Latin, 146. — The soft dental *d*, 147. — The dental Aspirate *dh*, 148. — Alternation of *d* and *t* in Latin. — The hard labial *p*, 150. — The soft labial *b*, 153. — The aspirated labial *bh*, 155. — The liquid *l*, 156. — The liquid *r*, 157. — The nasal *n*, 158. — The nasal *m*, 159.

CHAPTER VIII.

THE SPIRANTS.

The dental spirant *s*; rhotacism, 160; in Latin, 161. — Medial *s*; initial *s*, 162. — *s* before vowels, 163; between vowels, 164. — The soft spirant *z*, 165. — The digamma; evidence for its existence, 166; its representation in Greek dialects; metrical value, 167. — Initial digamma, 168. — Medial digamma, 169. — Combined with initial *s*, 170. — The palatal spirant *j*, 171. — The rough and smooth breathings, 171. — *ψίλωσις* and *θασύτης*, 172. — Secondary aspirates, 173. — Grassmann's law and Osthoff's theory of dissimilation in Greek, 174. — The rough breathing in Latin, 176.

CHAPTER IX.

COMBINATIONS OF SOUNDS.

Contraction in Greek, 178. — Of vowels of different quality, 180. — Shortening of long vowels, 183. — Lengthening of short vowels, 184. — Contraction in Latin, 185. — Combination of vowels and semivowels: Indo-European *ey*, 186. — Indo-European *oy*, 187. — Indo-European *el*, 189. — Vowel change not due to Ablaut, 190. — In composition, 191. — Indo-European *ri*, 192. — Consonantal combinations in Greek; assimilation of mutes, 192. — Double aspirates, 193. — Combinations of mutes and semivowels, 194. — Combinations of dentals with *μ*, 196. — Prothesis, 196. — Epenthesis, 197. — Compensatory lengthening, 198. — Dissimilation, 199. — Metathesis, 200. — Final consonants, 200. — Consonantal combinations in Latin, 201. — Mutes and spirants, 201. — Loss of initial *s*, 202. — Vowels long by position, 205. — Origin of Latin *ss*, 207. — Semivowels, mutes, and spirants, 211. — Dissimilation of liquids, 220. — Loss of a syllable, 221. — Assimilation of labials and velars, 221.

CHAPTER X.

ABLAUT OR VOWEL-GRADATION.

The nature of Roots, 222. — Vowel-intensification (Sanskrit *guṇa*), 224. — Curtius' theory of roots, 225. — The original vowels, 226. — The new theory of roots, 226. — Classification of roots, 227. — Vowel-gradation in roots, 228. — Three forms of the root, 230. — Aorist presents, 231. — Two forms of reduced root, 233. — The secondary accent, 234. — The *ē*-series of vowel-gradation, 236. — The *ā*-series, 239. — The *ō*-series, 242. — The *ṛ*-series, 244. — The *ṛ*-series, 246. — The *ṛ*-series, 247. — Roots with constant long-vowel, 248. — Confusion of series, 249.

CHAPTER XI.

ACCENT.

Meaning of Accent, 252. — Expiratory and chromatic, 253. — Grimm's law, 254. — The German languages, 254. — Grassmann's law, 256. — Verner's law, 257. — Syllabic and sentence accent, 263. — Sentence accent in Greek (Enclisis, Proclisis, Anastrophe), 264. — The law of three syllables, 265. — The accent in Sanskrit, 266. — Wackernagel's theory, 267. — Quasi-enclisis, 268. — Accent of enclitic verb-forms, 269. — Benfey's theory, 270. — Conflict of historic and recessive accent, 271. — Aeolic barytonesis, 272. — Accent of compounds, 273. — Of vocatives, 275. — Of words with dactylic ending, 276. — Anastrophe in prepositions, 278. — Accentuation in Enclisis, 280. — Accentuation of Latin, 283. — Enclisis in Latin, 285.

PART II.—MORPHOLOGY.

CHAPTER XII.

NOMINAL INFLEXION.

Morphology; as the basis of a classification of languages, 287. — Analytic and Synthetic languages; Roots and Suffixes, 288. — Nominal Inflexion, 289. — Gender, 290. — Systems of Inflexion: strong inflexion; weak inflexion; paroxytone inflexion, 291. — The formation of nominal themes: stems in *-o*; in *-ā*, 292. — Stems in *-io-*, *-īa*, and other suffixes, 293. — Stems in *-i*, *-u*, 294. — Stems in *-ei* and *-eu*, 295. — Diphthongal stems, 296. — Liquid stems, 297. — Nasal stems, 300; in Latin and Greek neuters, 302; in composition, 304. — Mute-stems, 305; Stems ending in *s*, 307; Comparative stems, 310; Perfect participle stems, 312. — Feminines in *-ā*, 313. — Latin noun-stems, 313. —

The Cases, 314. — Greek case-endings, 315. — The Greek cases in *O*-stems: singular, 316; dual, 318; plural, 319. — Cases of *A*-stems: singular, 321; dual and plural, 322. — Cases of *I*-stems, 324. — Cases of *U*-stems, 325; of *Ei*-stems, 326; of *Ey*-stems, 327. — *Zeûs*, *Boûs*, *vaûs*, 328. — Cases of Liquid-stems, 329; of Nasal-stems, 330; of Mute-stems, 331; of *S*-stems, 331. — The Latin Noun-system case terminations, nominative sing., 333; Nom. plur., 336; Accus. sing. and plur., 337; Gen. sing., 337; Gen. plur., 338; Dat. and loc. sing., 339; Abl. sing., 340; Dat. and abl. plur., 341. — Terminations containing *b*, 342. — Inflection of *O*-stems, 343; of *A*-stems, 344. — Imparissyllabic inflexion, 346; *Jupiter*, *bos*, 347. — Inflexion of *Ei*-stems, 348; of *Ey*-stems, 349; of nasal and liquid stems, 349; of stems in *-os* (oxytone), 350; in *-nt* (oxytone), 350; in *-os* (paroxytone), 351; of comparative stems, 351; of stems in *-nt* (paroxytone), 351. — Heteroclite neuters, 352.

CHAPTER XIII.

PRONOMINAL INFLEXION.

Deictic and Anaphoric Pronouns, 353. — Greek Personal Pronouns, 354. — Possessive Pronouns, 356. — Pronouns marking distinctions of gender, 357. — Interrogatives, 358. — Latin Personal Pronouns, 359. — Possessive Pronouns, 361. — Demonstrative Pronouns, 361. — Interrogative and Indefinite Pronouns, 362. — Inflexion of Pronouns, 362.

CHAPTER XIV.

COMPARISON OF ADJECTIVES—NUMERALS.

Comparison of Adjectives in Greek, 364. — Secondary suffixes, 365. — Comparison of Adjectives in Latin, 366. — The Numerals, 367. — Cardinal Numbers, 368. — Ordinals, Distributives, etc., 371.

CHAPTER XV.

THE VERB.

Finite and Infinite forms, 373. — Inflexional forms, 373. — Thematic and non-thematic stems, 374. — Nature of Person-endings, 375. — Greek Person-endings: First person sing., 375; Second person, 376; Third person, 377; First person plur., 378; Second person plur., 378; Third person plur., 379. — Dual endings, 380. — Middle endings, 380. — Augment, 384. — Temporal Augment, 385. — *η* as Augment, 386. — Tense-stems, 387. — Sanskrit Conjugation classes, 388. — Classification of Greek Present stems, 389. — First Class (*α*) with stem variation, 389; *εἶμι*, 390; *εἰμί*, 391; *φημί*, *ἡμί*, *ἐραται*, 392; *κείμαι*, *ῥμαι*, *ἔστην*, etc., 393; *ἔφθην*, *ἔκτα*, *ἔχρα*, 394; *ἔβην*, *ἔπτην*, *ἔφυν*, 395; (*β*) verb stem with indeterminate vowel, 395; (*γ*) long stem without

vowel variation, 396. — Aorists in *-ην*, 396. — Aorists in *-θην*, 397. — Aorists in *-σθην*, 398. — Second Class (reduplicated stems), 398; (α) with vowel variation, 399; (β) without vowel variation, 400. — Third Class (stems with added *-νν*), 401. — Fourth Class (stems with added *-να*), 403. — Thematic verbs, 404. — Nature of thematic vowel in pres. part., 404. — Fifth Class (thematic verbs), 405. — With strong and weak stems, 405. — Reduplicated thematic verbs, 407. — Sixth Class (*Yod*-verbs), 408. — Denominative verbs, 409. — Irregular denominatives, 410. — Causatives, 413. — Seventh Class (stems with added *-ρο-*), 413. — Eighth Class (inceptives), 414. — Ninth Class (nasal), 416. — The Perfect System, Reduplication, 417. — Stem variation, 419. — New formations, 420. — Addition of endings, 421. — Aspirated Perfects, 423. — The Perfect in *-κα*, 424. — The Sigmatic aorist, 425. — Stem variation, 427. — The Pluperfect, 428. — The Sigmatic future, 429. — The Doric future, 430. — The Conjunctive, 431. — The Imperative, 432. — The pseudo-conjunctive, 433. — Endings of the Imperative, 435. — The Optative, in non-thematic stems, 436. — The Aeolic optative, 437. — In thematic stems, 437. — The Infinitive, its origin, 438. — Terminations of the infinitive, 439. — The Participles, 440. — The Latin Verb-system, 441. — The Person endings, active, 442; passive, 443. — The Present system, 444. — Non-thematic verbs becoming thematic, 445. — Non-thematic conjugation, Roots *ei*, *dā*, 446. — Root *es*, 447. — Roots *ed*, *fer*, 448. — Root *vel*, 449. — Thematic conjugation, Imperfect and Aorist Presents, 450. — Reduplicated Presents, 450. — Presents with *-ι*, 451. — Nasalised Presents, 451. — Inceptives, 452. — *Yod*-Presents, 453. — The Perfect System, the Reduplicated Perfect, 455. — Loss of reduplication, 456. — The Augmented Perfect, 457. — Perfects with internal modification, reduplicated, 458. — Non-reduplicated, 458. — The Perfect in *-σι*, 460. — Confusion of Perfect and Aorist systems, 462. — Perfect in *-ρι*, 464. — Schulze's theory, 465. — Perfect in *-νι*, 467. — Inflection of Perfect, 468. — Future and Imperfect in *-b-*, 469. — The Conjunctive, 469. — The Optative, 470. — The Imperative, 471. — The Infinitive, 472. — The Participles, 473.

APPENDIX I. The two degrees of the Reduced Root. p. 475

APPENDIX II. Vowel-gradation in Nominal and Verbal Formations p. 477

INDEX OF GREEK WORDS p. 489

INDEX OF LATIN WORDS p. 517

ERRATA.

- Page 21, l. 14, for *rad* read *rád*
- „ 27, l. 5 from bottom, read 'Indo-European stock (Hübschmann, *K. Z.* xxiii. 5).'
- „ 50, l. 1, for 'aspirated *Mediae*' read 'aspirated *Mediae*'
- „ 96, l. 28, for *Fi-fáχ-η* read *FiFaχή*
- „ 136, l. 4 from bottom, for *ōj-ījan-* read *ōj-īyan-*
- „ 148, l. 19, dele 'ῥῶρ for *σφεῶρ,'
- „ 149, l. 20, dele 'rutilus is for *rud-tilus.'
- „ 159, l. 10, for *ήμ-* read *ήμ-*
- „ 255, l. 31, for *brother* read *bróþar*
- „ 256, l. 18, for *bind-en* read *bind-an*
- „ 257, l. 30, dele O. H. G.
- „ 258, l. 9, for *p* read *f*.
- „ 258, l. 31, for *cweðan, cwæð, cwéðon, cweden* read *cveðen, cvæð, cvéðon, cveden*.
- „ 259, l. 2, for *scriðan* read *scriðan*
- „ 261, l. 13, for *næss* read *næs-*
- „ 332, l. 16, read 'εἰδῶσι in place of an original εἰδυσ-σι'
- „ 333, l. 22, for 'without' read 'with'

King and Cookson's Philology.

CHAPTER I.

INTRODUCTION.

THE comparative study of language is one of the youngest ^{Study of} of the sciences ; it dates back in its origin no further than ^{Language.} the second decade of this century. But its development during the sixty or seventy years of its existence has been quite disproportionate to its age. From all time, it is true, scholars have devoted themselves to philology in its widest sense, the study, that is, of language and of literature; but so long as Latin and Greek were exclusively the objects of enquiry, investigations into the nature of sounds and words were directed rather by individual taste than scientific method. Little light was thrown upon the mutual relations of different languages, and the field of observation was too narrow to permit of the framing of scientific inductions and universal laws.

It was the discovery of an Asiatic language unknown to Greece and Rome which not only gave an insight into the structure of the Greek and Latin languages, but linked them along with the dialects of Persia and Armenia and with the speech of German, Celt, and Slav as common members of the great Indo-European family. The aim of the comparative study of these languages is to trace the course of their development from a common origin in the parent language and to discover the laws of this development, both those which affect the body of language as a whole and those which operate within the narrower limits of subordinate groups.

Sanskrit became known towards the end of the last century, ^{Sanskrit.} and however much in more recent times the science of language may have abandoned England to make its home in Germany, it is interesting to note that the first impulse to the study of this science came from the labours of two Englishmen, servants of the East India Company, Sir William Jones and Henry Thomas Colebrooke. The founders of the Asiatic

Society of Calcutta were the first to study Sanskrit literature and Sanskrit grammar for the benefit of Europe and to observe the connexion between this tongue and the kindred languages of Europe. They were struck by the resemblance between the vocabularies, as, for instance, in the words denoting parentage, the names of the parts of the body, of animals and numbers; by the similarity of grammatical organization, of the processes of derivation and composition, of case and person terminations. Sir W. Jones said in 1786, before the Society of Calcutta, that 'no philologist who had examined the three languages of Sanskrit, Greek, and Latin could fail to recognize that they were derived from some common source, which perhaps no longer existed.' Subsequently it was assumed that Sanskrit was the mother tongue, and the Hindus were looked upon as the ancestors of the nations of Europe. But Sanskrit cannot be regarded as the original language. The Zend or ancient Persian, which was afterwards discovered and which belongs to the same family, cannot be derived from Sanskrit, but must be referred along with it to a common origin. Sanskrit, it is true, has preserved forms more archaic than the corresponding forms of Latin and Greek, but it would be impossible to derive from Sanskrit many of the characteristic features of Greek and Latin verbal and nominal formation. Again, the treatment of sounds is often different, as is strikingly illustrated in the case of the palatals. Just as Latin is not derived from Greek, so Greek and Latin are not derived from Sanskrit. All three are closely related and sprang from the same parent stock.

Compara-
tive Study
of Lan-
guages.

So long as the field of study was limited to Greek and Latin alone it was impossible to distinguish with certainty the primitive from the later form. The discovery of Sanskrit provided the term of comparison so long required. To the ancient Greek all speech save his own was barbarous, and the idea of a common origin of language was alien to his mode of thought. Rome followed the example of her Greek teachers, and discerned no resemblance to Latin in the tongue of Celt and Teuton. When Christianity introduced the doctrine of

a common humanity, the wish to explain the varieties of human speech gave the first impulse to the comparative study of language.

For a long time the belief inculcated by the early fathers prevailed, that Hebrew was the primitive language from which all others were derived, and to the support of this doctrine much time and industry were directed during the 17th and 18th centuries. Leibnitz was the first to point out that such a theory was as baseless as the contention of that citizen of Antwerp who maintained that Dutch was the language spoken in Paradise. Leibnitz, too, first applied the principle of sound inductive reasoning and called upon the students of language to begin, as in other sciences, with the known, before proceeding to the unknown. Indirectly, we can estimate the value of the discovery of Sanskrit by looking at the condition of classical philology when limited to its own resources at the beginning of this century. Hermann endeavoured to reform grammatical study, not by pursuing the comparative and historical method, but by an analysis of dialects, by a critical examination of ancient grammarians, and by the light of philosophy. To take an instance of the practical outcome of such a method, he regarded the ablative as a case of recent origin invented to ease the dative of its load. This new case fixed the limit of the possibilities of nominal declension, as was proved by arguments drawn from the nature of the human mind. But, in spite of *a priori* reasoning, the arrival of Sanskrit grammars in Europe showed that the old language of India possessed eight cases.

The discovery of Sanskrit not only introduced order and classification into the study of grammatical phenomena; it increased in a remarkable degree the precision of observation by making known the works of a long line of ingenious and subtle grammarians. No doubt the study of language excited intense interest in ancient Greece, but Grammar was there the child of Logic, and analysis of the phenomena of speech was preceded by more general enquiries into the nature of thought and language. Much of the terminology of

Grammar
in Sanskrit
and Greek.

the Greek grammarian, the distinction between noun and verb, the terms of case, number, and gender were received from the hands of philosophers. The beginning of the critical study of language, in the modern sense of the term, was made in the schools of Alexandria and Pergamum ; it was however directed, not to a comparison of different languages, but to the study of the ancient dialects of Greece, and was chiefly based upon the recension of the text of the Homeric poems. Zenodotus, for instance, distinguished between the dual and plural numbers, discussed the use of the Homeric article, the meaning of words, the differences of dialects and constructions peculiar to poetry. A practical grammar was not written before the first century B.C., when Dionysius Thrax, a pupil of Aristarchus of Alexandria, produced one to aid in the teaching of Greek at Rome.

Grammar in ancient Greece was subordinated to philology, and hence the function rather than the form of words was the end to which this study was directed. Words were distinguished, not according to the nature of the elements of which they are composed, but according to the part they play in thought. Such studies have formed and always will form an important part of general philology, but are distinct from the endeavour to trace the descent of different languages from a common origin by a consideration of the nature and mutual relation of their sounds.

While in Greece Grammar sprang from the study of the Homeric poems, in India it sprang from the study of the Vedas, the sacred hymns of the Brahmins. In these poems everything was alike of equal importance ; each articulation, each inflexion of sound was sacred, and hence came the minute attention and rigorous exactitude of the Indian grammarians. They invented a chemistry of language, flung its body as it were into the crucible, and decomposed it into its several elements. They noted the mutual influence of neighbouring sounds, and determined the relative length of different syllables, and thus provided that minute analysis of language which was wanting in Europe. The analysis of a word in Sanskrit is rendered far more easy than in the case of its

Greek or Latin equivalent, the distinction between root, suffix, and ending being more sharply defined. On the other hand, it is in syntax, in the arrangement and analysis of words combined in sentences, that the Greeks made such progress, and formed their language into an instrument of surpassing delicacy and subtlety in the expression of the finest shades of meaning, to which the Hindus can show no parallel. Both the Greek and Indian methods have their value in the study of philology, but the present work is concerned more with the form than the function of words and their elements, with the variation of their sounds rather than their changes of meaning, with their phonetic nature rather than their syntactical use.

The labours of Sir W. Jones and Colebrooke and their fellow-workers amounted to no more than a clearing of the ground. The foundation of the modern science was laid by Franz Bopp (b. 1791), the author of the first comparative grammar. It is the merit of this famous scholar to have given a scientific proof of the previously hypothetical connexion of the most important members of the Indo-European family in his chief work, the *Comparative Grammar of Sanskrit, Zend, Armenian, Greek, Latin, Lithuanian, Old Slav, Gothic, and German*, first published in 1833. But it is not on this that he would himself have based his claims to recognition. His labours were mainly directed to the investigation of the origin of inflexion.

The view of inflexion which prevailed in Bopp's day was that there were two kinds of languages, those in which changes of meaning were signified by an inner modification of the root, and those in which, for the same purpose, different elements were added to the root. This theory is expressed by Friederich von Schlegel in his treatise on the language and literature of India. It had long been noticed that the modern languages of Europe are more analytic than the classical; that, as Bacon puts it, the modern languages 'slothfully express many things by prepositions and auxiliary verbs,' while 'the genius of former ages was more acute,' and em-

Franz
Bopp.

Views of
Inflexion.

ployed changes of inflexion. Now to Schlegel inflexion was an inner modification of the root of a word. He admits that it may be possible that in Greek the syllables, which form the terminations of nouns and verbs in declension and conjugation, were originally distinct particles and auxiliaries. Of such amalgamation, however, he discerns no trace in the Indian language. Inflexion in Sanskrit was the change or transposition of primary radical sounds and 'not the merely mechanical process of annexing words or particles to the same lifeless and unproductive root.' The languages in which, as in Sanskrit, changes of meaning were distinguished by an inner modification of the root, were called *organic* languages, while to those in which different words or particles were affixed externally to the root, the term *mechanical* was applied. In the one the root was a living germ, in the other it was a lifeless atom. Such an account we must regard as vague and metaphorical, and as affording no real explanation. The truth is that Schlegel regarded Sanskrit as the parent language from which Greek and Latin were derived, and in regard to which they held almost the same relation as the Romance languages to Latin. Holding this theory, and believing that the tendency of later languages was to employ analytical forms of expression for the earlier inflexions, he regarded Greek as more analytic than Sanskrit, and French and Italian as more analytic than Latin. Bopp refused to accept Schlegel's view of inflexion, and put forward his own theory of Agglutination as the true explanation of the forms of inflexional languages.

Bopp and
Schlegel.

In the Comparative Grammar (i. 225, § 108, of the French edition by M. Bréal, 1866) he discusses the theory of Schlegel. If inflexion means the interior modification of the root as opposed to the external addition of a syllable, what are we to say of the formation of $\delta\acute{\iota}\delta\omega\text{-}\mu\iota$, $\delta\acute{\omega}\text{-}\sigma\omega$, $\delta\omicron\text{-}\theta\eta\sigma\acute{o}\mu\epsilon\theta\alpha$ from the root $\delta\omega$ or $\delta\omicron$? What are $\text{-}\mu\iota$, $\text{-}\sigma\omega$, $\text{-}\theta\eta\sigma\omicron\mu\epsilon\theta\alpha$, if they are not external complements added to the root, which, if not invariable, is only subject to a change of quantity? We cannot regard $\delta\omicron\text{-}\theta\eta\sigma\acute{o}\mu\epsilon\theta\alpha$ as an internal modification of the root $\delta\omicron$, neither can we trace any mark of relationship

between $-\mu$, $-\sigma\omega$, $-\theta\eta\sigma\sigma\mu\epsilon\theta\alpha$, and the roots to which these elements are joined. In view of these difficulties Bopp decides that Indo-European inflexions are not internal developments of the root¹, but elements with an independent value of their own, which do not belong to the root, but have come from the outside. He distinguishes three classes of languages.

1. Languages like the Chinese, which are without true roots, without power of composition, and therefore without organism, without grammar. Classification of Languages.

2. Languages like the Indo-European family, where the roots are monosyllabic, but capable of combination with one another. The principle which underlies the formation of words in these languages is the combination of verbal and pronominal roots.

3. Lastly come the Semitic languages, with disyllabic verbal roots, in which the fundamental meaning is expressed by three necessary consonants. It is in these languages that grammatical forms are created, not only by composition, but also by internal modification of the root.

Bopp thus did away with the previous distinction into organic and mechanical languages. His theory of the Indo-European languages as formulated included the distinction of verbal roots, from which come nouns and verbs, and pronominal (or, as they have been called, demonstrative) roots, a less numerous class, from which are derived pronouns, primitive prepositions, conjunctions, and particles. According to the theory of agglutination, the terminations of case and person were originally pronouns, e. g. the $-s$ termination of the nom. sing. comes from the pronominal theme sa (§ 134), and in the second pers. sing. of the verb is to be found the pronominal theme tva (§ 443); in the s of the sigmatic aorist in Greek and of the Latin perfect is to be recognized the verb substantive (§ 543); the suffix $-aya-$ of causatives comes from the root $\sqrt{i}$, to go, or $\sqrt{i}$, to desire Bopp's theory of Agglutination.

¹ Reduplication may be regarded as an internal development of the root, seeing that it is formed out of the resources of the root itself. So, too, changes in the vocalism of roots, in different nominal and verbal formations, which we distinguish as ablaut or vowel-gradation (*ch. x*), are internal modifications.

(§ 740); the root $\sqrt{as}$, to be, is found in *man-as*, μένος (§ 931), the root $\sqrt{kar}$, to make, in *volu-cer*, and the root $\sqrt{tur}$, to traverse, in *δο-τήρ* and *πλήκ-τρον* (§ 815). An illustration of the length to which the theory of agglutination was pressed by Bopp's successors may be seen in the analysis of βάθος into the roots $\sqrt{\beta a}$, to go, $\sqrt{\theta \epsilon}$, to make, and $\sqrt{\acute{\epsilon} s}$, to be, or again in the analysis of λυθήσομαι into (1) the root $\sqrt{\lambda \nu}$, to loose, (2) θ , the relic of $\sqrt{\theta \epsilon}$ of τίθημι, (3) η representing $\sqrt{j a}$, to go, which comes in εἶμι, (4) *σο* from ἔσομαι the substantive verb, (5) *μαι* representing an oblique case of the first personal pronoun, and the whole signifying 'There will be (*σο*) a going (η) to make (θ) me (*μαι*) loose ($\lambda \nu$).' The one certainty in this triumph of ingenuity is that $\sqrt{\lambda \nu}$ means 'loose.' It is also conceivable that *μαι* is to be connected with the stem of the personal pronoun. The rest is baseless and fantastic. Why should θ be referred to τίθημι or η to εἶμι?

A correct analysis of λυθήσομαι would recognize the root $\sqrt{\lambda \nu}$, which is common to all forms of the verb λύω, would distinguish $\theta \eta$ as the characteristic suffix of the stem of the weak aorist passive λυ $\theta \eta$, and would regard *σο* as the sign of the future, and *μαι* as the personal ending; *μαι*, as has been said, may be connected with the stem of the first personal pronoun, but $\theta \eta$ and *σο* are suffixes upon whose origin we cannot pronounce with certainty. Were we in a position to trace the growth of the original language, we might perhaps be able to explain the force and trace the history of the different suffixes, but as things are, we have to deal with the derived languages which inherited those suffixes. An extreme instance of the agglutinative theory in Bopp's own hands is his identification of the augment with a privativum, by which ἔλυσα was thought to have come to mean 'I loosed once,' because it started with the meaning 'I am not loosing now.' Bopp's opponents naturally asked how it was possible to believe that when primitive man wished to say 'I have seen,' he said, 'I do not see now.'

Analogy of
Physical
Sciences.

To some extent in his comparison of different languages, Bopp employed the phraseology of the physical sciences.

Thus, in the preface to the Comparative Grammar, he says : ' I propose in this work to give a description of the organism of the different languages which are named in the title, to study their physical and mechanical laws, and to enquire into the origin of the forms which express grammatical relations.' To Schlegel, as we have seen, organic change had meant internal change in a word, as distinct from the mechanical change which was effected by external additions. To Bopp an organism was the arrangement which results from agglutination, that is, from the combination of different elements. The superiority of the Indo-European languages, as he points out (i. 230, § 108), consists 'in the close union which combines root and inflexion into an harmonious whole, comparable to an organized body.' Chinese is without organism and without grammar, but the power of combining monosyllabic roots gives the Indo-European languages an organism and a grammar. Still in the Sanskrit, Greek, and Latin languages, as we find them, this power of combination is dead ; and consciousness of the meaning of each element of an agglutinative word has been gradually lost, and the original form altered in accordance with newer principles of euphony which have been subsequently developed. Consequently these languages are in a state of decay. Still further decay is to be found in the languages of modern Europe, where inflexion has fallen into comparative disuse and analytical modes of expression have taken the place of the old agglutinative forms.

Of the terms mechanical and physical law, as applied to language, Bopp has himself given an explanation in a note appended by M. Bréal to the preface of his translation : ' By mechanical laws I understand in general laws of gravity, and in particular the influence which the weight of the personal endings exercises upon the preceding syllable.' This he would illustrate, for instance, by the change of *a* to *i* in *cano*, *ce-cin-i*, and the reduction of the root in *ἵ-μεν* as compared with *εἵ-μι* of the singular. This last variation would be connected by modern philologists with the shifting of the accent. Bopp applies to it the language of statics.

Physical or
Phonetic
Laws.

Again, by the term physical laws 'Bopp designates the other rules of grammar, particularly phonetic laws. Thus, where in Sanskrit we find *at-ti* (he eats), in place of *ad-ti*, the change of *d* to *t* is caused by a phonetic law.'

These physical, or as we should style them phonetic, laws would not now be accepted as true scientific generalizations. As Delbrück says (*Study of Language*, p. 22), 'that vowels should be lengthened without cause, extensive mutilations take place without conceivable provocation (as, e. g. that *ἐτύπην* should be a mutilated form of *ἐτύφθην*), and that the same phonetic group should pass into widely differing formations in the same linguistic period, appears to Bopp not at all extraordinary.' The modern dictum that phonetic laws admit of no exception was foreign to Bopp's view, since according to him 'we must expect to find no laws in language which offer more resistance than the shores of rivers and seas' (*Vocalismus*, p. 15). In this branch of the subject Bopp was too much under the influence of preconceived notions as to the identity of words, to suit which he often distorted the facts of language, and turned his back on his own laws.

Jakob
Grimm.

The next great name in the history of the science is that of Jakob Grimm (b. 1819), the founder of historical grammar. His labours were almost entirely directed to German philology, and therefore do not so much concern us here; but as the first to assert the importance of studying language in its natural condition rather than its literary form, he became the founder of a school of philologists, amongst whom we might mention Ahrens. But though not so much a comparative philologist primarily, he did inestimable service to the science in formulating the great law of consonantal change which still goes by his name, and in demonstrating the importance of a historical knowledge of the letters of different alphabets.

A. W. Pott. A. W. Pott in his *Etymologische Forschungen* (1833-1836), became the founder of modern phonetics, and to him the great body of current etymologies is due. He was the first to construct comparative tables which covered the whole

extent of the related families of speech, and to formulate the phonetic laws of the several languages.

Passing over those scholars who devoted themselves mainly to Sanskrit we come to August Schleicher (1821-1868). To him is due the classification of languages into isolating, agglutinative and inflexional. These three stages succeed one another chronologically, and it is in the last that a language reaches its full development (*Compendium*, p. 3). But the languages of which we have experience, that is, the modern languages of Europe, are not in a state of development but of decomposition. English and French are less perfectly inflexional than Greek and Latin. Schleicher accordingly argued that languages were formed in prehistoric times, and are destroyed in historic. Such a distinction between prehistoric and historic development can be no longer maintained. Like Bopp, Schleicher regarded language as an organism with a life of its own; as a botanist of mark he was influenced by the analogy of the natural sciences, and applied to the study of language the method of those natural sciences. But to say that language is an organism is only to employ a metaphor; the proper method of studying the phenomena of language is to trace the historical course of their development. Schleicher did great service by organising the results of previous inquiries and formulating phonetic laws. It is to him that many philologists look as the first to insist upon that regularity of phonetic laws, which is so marked a feature of modern inquiry (Collitz *B. B.* xi. 3). And in such a remark as 'the essence of inflexion lies in the vocalism,' he to some extent anticipates later theories of the ablaut or vowel-gradation.

There is one new feature in Schleicher's system that demands special notice. He was the first to reconstruct the *Ursprache* or original Indo-European language. Previous scholars had been content to reduce the existing forms of one language to the corresponding existing forms of another related language. Schleicher was the first to go beyond this, and attempt to reproduce the primitive forms from which all the existing forms are derived.

August Schleicher.

The 'Ursprache.'

As this reproduction of original forms is a common feature in more modern works, it may be well to ask what the value and what the certainty of such attempts may be.

Primitive
Sounds.

The first difficulty that meets us in such attempts is the question how we can determine what is primitive and what is secondary. How many vowels had the original language? How many consonants? To these questions Schleicher returned an answer very different from that which would be given now. At the beginning of his *Compendium* he asserts the existence in the original speech of the following sounds—

Consonants, <i>k, g</i>	Spirants <i>j, s, v</i>	Vowels <i>a, i, u</i>
<i>p, b</i>	<i>n, m, r.</i>	<i>aa, ai, au.</i>
<i>t, d.</i>		

To these, later but still in very early times, were added the aspirates *gh, dh, bh*, the liquid *l* and the diphthongs *āa, āi, āu*. The 'new school' of philologists would recognise the aspirates as primitive, add a second row of gutturals, and a series of semivowels, including the nasal and liquid sonants; *i* and *u* would cease to rank as vowels proper, and the original vowels would be given as *a, e, o*.

Value of
recon-
structions.

It may be asked what is the value of such attempted reconstructions, if they have a character so little permanent? The answer is, that as in astronomy the Copernican theory was a sufficient explanation of the phenomena under observation at the time, and was not necessarily a bad or useless hypothesis, because it first had to be modified by the theory of epicycles, and was finally superseded by the Newtonian theory, so the want of finality in any attempted reconstruction of the original language does not necessarily destroy the value of such reconstructions as a means of investigation. As the field of investigation widens, we must necessarily have some means of connecting the results of our enquiry in the several languages, and must make some attempt to decide what part of our material is original, and what part is independently developed in each language. No philologist would assert that he had restored the original language with any certainty except as regards a very small group of words, for

the mere fact that the vocabulary common to all the related languages is excessively small makes any such assertion impossible. But if we accept the hypothesis that all languages of what we call the Indo-European family are eventually derived from some one primitive language, we are bound to show that the facts of the derived languages are consistent with this hypothesis, or else to modify the hypothesis in accordance with the facts. The original language is merely an 'ideal construction' expressing the views held at any one moment by scholars as to the extent and nature of the material hereditary in the derived languages. But because the expression changes it is not therefore valueless. The reconstructions of an animal from a single bone made by the palaeontologist may be modified or even superseded by subsequent discoveries, but nevertheless serve a temporary purpose, and hold good till the new discoveries are made.

The last of the old school of philologists is Georg Curtius, ^{Georg Curtius.} who died in 1885. Under him the comparative science of language made great advances, and he is the scientific father of the younger school of continental philologists. He devoted much pains to tracing the chronological development of the different languages and forms, and his two great works on the Principles of Greek Etymology, and the Greek Verb, must remain in many points as standard authorities. But perhaps his most important contribution to the science was his theory of the splitting of the A-sound: not because the theory was sound in itself, but because it was the first attempt to upset the view of the vowels which had been unimpugned since the time of Bopp. The discovery that the E-sound was common to all European languages, and the referring of its origin to the period of a common European language were a great step in the right direction, and cleared the ground for the subsequent discoveries of Ascoli, Collitz, Fick, and Schmidt. These discoveries will be discussed at length further on in this book.

It now remains to give a short sketch of the new principles and new methods which, in the last fifteen or twenty years, have transformed the science,

Old and
New
Methods.

The earlier investigators dealt too exclusively with the language on paper, and considered too little the men who spoke that language. Of the two factors which operate in producing changes in the material of a language, they emphasized the importance of one only. A physiological element—the principle of ease of articulation—is prominent in the writings of Curtius: the psychological factor—the influence of assimilation and analogy—is almost entirely ignored. And as these enquirers laid undue stress on the reconstruction of the original language, so they gave excessive weight to the oldest forms of the derived languages—e.g. in Sanskrit the Vedic, in Greek the Homeric dialect, as approaching in form nearest to the mother tongue. In formulating the laws of phonetic change they considered rather the relation of this hypothetical original speech to the forms supposed to be most nearly connected with it, than the relation of more modern forms to those languages with which they can be proved historically to be connected. But it is obvious that the laws of development in language cannot be derived *a priori* from an investigation of the connexion of the Homeric dialect, e.g. with a supposed pre-Homeric, pan-Hellenic language. Rather we must look to those languages whose development can be historically traced—at the modern and middle German dialects in their relation to the old German—at the Romance languages in their relation to the Latin. And there is this further advantage, that here we meet with a continuous series of records which give us the language as it was spoken, and we are not confined to the investigation of a fixed literary type. And in this investigation of the modern languages we are led to the assumption of the following two principles for the science of language as a whole.

Phonetic
Laws.

I. Every phonetic change, so far as it is purely mechanical, is accomplished in obedience to universal laws, which admit of no exception. Every word in which the same sound appears under the same conditions is subject to the same phonetic change. Where a language is split into a variety of dialects,

apparent exceptions will be found, as, for instance, in Greek ἱκκος, ἱππος: ποῦ, κοῦ.

II. The principle of Analogy, i. e. of the alteration of forms by their association with other forms connected with them grammatically or otherwise, plays an important part in modern languages. Just as fancy works in the extended association of the meaning of a word, so in the same way with the formation of new, or the change of old words, the process is affected by fancied resemblances or supposed analogies. The same principle is to be recognized as operating in all, even the most ancient periods of the history of language.

These are the two cardinal principles which distinguish the new from the older school of philologists. They are so important as to demand a more detailed discussion.

1. First, as regards the theory of Phonetic Law. Bopp was content to say that Sanskrit *d* for example sometimes represented Greek *δ*, sometimes Greek *θ*, without any further investigation of the conditions by which the one or the other was determined. It is clear that from such a statement of the facts no true scientific generalizations are possible. Curtius made it his aim to establish, and was successful in establishing, more scientific views, but even he was content with mere approximations to universality. He saw no difficulty in holding that a phonetic change might take place in some cases only, under given conditions, while under the same conditions in other cases it might not occur; nor again in holding that a single language might represent the same original sound under the same conditions in different ways. In cases like *τέγος* beside *στέγος*, he would say that the *σ* had been dropped in the former word, not in the latter: in *ἐχθαίρω* he saw an epenthesis, which did not under the same conditions occur in *ἐλευθέριος*. Where he attempted explanations of exceptions they are not such as we can now acquiesce in. When he said that the intervocalic *ι* disappeared in *ἱπποιο* = *ἱπποο* = *ἱππου*, because the need of it as a special syntactic sign for the genitive was not felt, while it was kept in *λέγειεν* because of its importance as a syntactic element, he implied

Theory of
Phonetic
Law.

that such phonetic changes are conscious, and that the Greeks inherited from their forefathers not words and systems of inflexion in their entirety, but rather the elements of which words are composed, while the composition was their own individual work. And though he admitted that the intervocalic σ in $\xi\sigma\tau\eta\sigma\alpha$ is due to the analogy of $\xi\delta\epsilon\iota\zeta\alpha$, etc., yet he would not have said that $\xi\sigma\tau\eta\sigma\alpha$ is a new formation on the analogy of $\xi\delta\epsilon\iota\zeta\alpha$, but rather that the σ was arrested in the act of disappearing by the influence of this analogy.

Spoken
Language
and its
changes.

We can hardly insist too much on the instability of a spoken language. The motions of the organs of speech in producing a given sound are in no two cases exactly the same even in the same individual. But the difference of sound in any two cases is so minute as to be imperceptible both to the speaker and the listener, and any undue divergence is prevented by the necessity under which the speaker lies of being intelligible to those whom he addresses. Any such change therefore as that from original k as we find it in Greek to the h which appears in Low German could only have been accomplished through a series of minute changes,

e. g. $k - k_1 - k_2$, etc., — h ,

and have been completed only in a community which had ceased to have intercourse with the original stock. It is inconceivable that in the same community the word corresponding to Latin *caput*, A. S. *heafod*, should have been pronounced by some people with an initial aspirate, by others with an initial guttural. But nevertheless when the change was completed it must have been universal, and all initial k 's must have become initial h 's. For the pronunciation of a language is not learnt by learning the pronunciation of all the words which it contains; rather where the same conditions are present, there is an impulse towards the same motions and adjustment of the vocal organs, and the same sound results. And though some members of the same community may have pronounced k_2 , while others pronounced k_1 , yet the difference between the two being infinitesimal, the speech of the community as a whole must at

any one time have been homogeneous. Nothing more than this is meant by the universality of phonetic law, that is, an uniformity which we can prove historically to have existed within a definite area at a certain time.

We have already implied that phonetic change is uncon-
scious. Conscious change would only occur where there was a necessity for distinguishing between two words which had a different signification, but were or had become identical in sound. When Curtius says that some sounds were maintained as specially significant, he implies that this significance, e.g. of optative *-ι*, was consciously felt by the Greeks, and that the tendency to drop the *ι* was consciously arrested. But as we do not suppose that in saying *j'aimerai* a modern Frenchman is conscious of the connexion of the termination with the Latin *habeo*, so we need not imagine that in using *εἴη* the ancient Greek felt that the special optative meaning lay in the *ι*. Again, when Curtius speaks of the maintenance of the *σ* in *ἔσθησα*, he implies that the speakers consciously avoided a threatened change. The Greeks may never have said **ἔσθηα*, but this only means that in the prehistoric times, when intervocalic *σ* was disappearing, the analogy of *ἔδειξα*, etc., was already felt: the *σ* was not consciously arrested in the act of disappearing, but *ἔσθησα* or rather *ἔσθᾶσα* is a new formation which supplanted the phonetically accurate **ἔσθηα*. This is no exception to the phonetic law; the law has been crossed in the earliest times by the counter law of analogy. That the result of the analogy is to reproduce the primitive form is not an argument for *ἔσθησα* being historically a survival. In late Greek we find the form *φέρεσαι* (2nd sing. mid.), but no one would suggest that this was a survival, though it happens to be identical with the prehistoric form.

Phonetic
change un-
conscious.

There are certain other considerations which we have to take account of in dealing with the so-called exceptions to phonetic laws. The graphic representation of sounds may be inexact; words phonetically identical may be written differently (e.g. Germ. *man*, *Mann*; *das*, *dasz*), or at a time

Exceptions
to Phonetic
Law.

when a change of pronunciation is in progress we may get a double graphic representation, the one being the traditional spelling which the literary language still preserves, the other representing the current pronunciation. This is especially the case with the Latin vowels. Again we have to consider the case of words borrowed from neighbouring dialects, which necessarily obey different phonetic laws; or the exceptions may be new forms which have come into existence after a phonetic law has ceased to be in operation. For instance, an original $\bar{a}$ becomes in Attic η , but nevertheless we find in Attic $\tau\acute{\mu}\bar{a}\varsigma$ with a long $\bar{a}$, because at the time when $\bar{a}$ became in Attic η , the acc. pl. still showed $\check{a}$ as the final vowel of the stem of feminine words in this declension. The lengthening of the $\check{a}$ to $\bar{a}$ after the loss of the nasal was a later step, taken when the change from $\bar{a}$ to η was already completed throughout the dialect. The short $\check{a}$ of A-stems corresponds to the o of O-stems. Thus $\tau\acute{\mu}\check{a}\text{-}\nu\varsigma$ answers to $\acute{\iota}\pi\pi\text{-}o\text{-}\nu\varsigma$: these in Attic appear as $\tau\acute{\mu}\alpha\varsigma$, $\acute{\iota}\pi\pi\text{o}\nu\varsigma$. Further, the exceptions may be due to a conflict of two laws. Thus the termination of the Greek 3rd sing. $-\tau\iota$ becomes $-\sigma\iota$ between two vowels in $\delta\acute{\iota}\delta\omega\sigma\iota$, but is unchanged in $\acute{\epsilon}\sigma\text{-}\tau\acute{\iota}$ because of the preceding σ .

Again, the same form under different conditions may have taken different shapes, and then either one of the two resulting forms disappears or both are used indifferently. Thus the d of *quod*—old French *qued*—was originally lost only before consonants, and in Greek $\acute{\epsilon}\lambda\varsigma$ ($\acute{\epsilon}\nu\varsigma$) was once the form in use before vowels, $\acute{\epsilon}\varsigma$ before consonants.

Further, what appears to be a later ‘splitting’ of a sound may be an original distinction, as is now thought to be the case with the vowels a , e , o , which were formerly regarded as the results of a splitting of the a -sound.

Finally certain forms, e. g. reduplications, seem to have special phonetic laws—i. e., in these cases alone is found the combination which is the condition of the particular change. The law is special, but none the less universal in its own sphere.

And here we may notice that phonetic law is most fully

in operation in what we may call the natural as opposed to the artificial state of a language. The artificial or literary form of a language is liable to corruption, not merely from the fact of borrowing from other literatures, but also from the influence of its grammatical system, from the wish, that is, to reduce to similarity of sound forms recognized as grammatically cognate; hence the appearance it presents is often one of extreme confusion. The spoken language of ordinary life is not subject to these influences, and is therefore more entirely under the domain of phonetic law. And though from the nature of things the 'natural state' of the greater number of Indo-European languages must be unknown to us, yet in dealing with the literary language we must not forget to make due allowances for those influences to which such a language is so specially subject.

After all this has been said, there will, of course, remain forms unexplained. But these we must look upon rather as problems than exceptions—results not of the nature of things, but of our own ignorance. There is a wide difference between acquiescing temporarily in an unexplained residuum and disguising our shortcomings with some such phrase as 'sporadic change.'

We now come to the second great principle—Analogy. *Analogy.* The important part played by this principle in the language of every-day life can scarcely be overrated. A very considerable proportion of the words we use we have never actually learnt, but rather formed in imitation of other forms we have heard or used previously. Memory is no doubt the most important agent in our speech, but association is hardly less important, especially in the young. Everyone must know how a child beginning to talk has one or two types by which it inflects all its verbs. And this principle of association is by no means inactive in adults, so that it is possible for us to use in conversation a word which we have never heard or seen, but which we form instinctively on the analogy of other words. Hence comes the possibility of the introduction of new forms which transgress the established usage, but

unless this new form is spontaneously and simultaneously accepted by a majority of the speaking society, it will never be used to the exclusion of the old. Hence it often happens that the new form, which is the result of analogy, exists side by side with the form which is the result of phonetic law, e. g. *Σωκράτην*, side by side with *Σωκράτη*. Phonetic change is a revolutionary force in language, on the one hand destroying existing groups of words, on the other calling into existence new forms, and introducing apparently aimless distinctions into systems of closely related words. By this principle we say *ἐστί* but *εἰμί*, *κείμεναι* but *κέαται*, *concutio* but *concussi*. Analogy is the reaction against this power—the restorative influence which brings back the lost harmony and symmetry of inflexion, and reasserts the principle that what is similar in meaning should also be similar in sound. It also leads to the creation of new on the model of old forms. A few instances from different languages may not be out of place; many others will be found in the body of this work.

In Greek we find *ἐσ-μέν* in place of *εἰ-μεν*, following the analogy of *ἐστέ*, *ἐστί*. The regular form is found in *εἰ-μί* for *ἐσ-μί* and *εἶ-μαι* for *ἐσ-μαι*, while the same *εἶμαι* appears as *ἔσμαι* in Homer (ω. 250) and in the Attic compound *ἡμφίεσμαι*. Side by side with *κέαται* Homer has *κείαται* upon the analogy of *κεί-μαι*.

Out of the resemblance of *βεβαῶς* (*βεβηFῶς*) and *ἐσταῶς* arose the perfect *βέβᾱκα* (*βέβηκα*) on the analogy of *ἐστᾱκα*, and in the same way from the resemblance of *ἐσταῶς* and *γεγαῶς* (*γεγῆFῶς*) Pindar has formed a perfect *γεγᾱκα* in the infin. *γεγάκειν* (*Ol.* 6. 49), upon the same analogy.

A still more convincing instance is to be found in the present tense form *δεῖδω*. In Homer we have the perfect *δεῖδια*, 1st plural *δείδιμεν*, which appears in Attic as *δέδια*, *δέδιμεν*. The present stem answering to this perfect appears in the Homeric forms *δίον*, *δίεσθαι* (cf. Veitch s. v. *δίω*). The word *δεῖδω*, also an Epic form, appears only in the 1st pers. sing. and there is no imperfect. It is really a perfect; *δεῖδω* contracted from *δεῖδοα* for *δεῖδοχα* for *δεδFοχα*.

Other instances of analogy in Greek are ἐμοῦ beside μοῦ, on the analogy of ἐγώ, δουλεύω beside δοῦλος, on the analogy of πρεσβεύω beside πρεσβεύς.

In modern German we have *fliege, fliegst, fliegt* for *fliege, flugst, flucht*, where the second and third persons have been assimilated to the model of the first.

In French we find *aimons* (amámus), *aimez* (amátis) altered from **amons, *amez* on the analogy of *aime* (ámo). (Cf. Brachet, *Historical French Gram.*, pp. 62, 77.)

In Anglo-Saxon we find *fót*, pl. *fét*, answering to modern English *foot, feet*, but for A. S. *bóc*, pl. *béc*, modern English shows *book, books*, following the analogy of such words as form the plural in *s*. The preterite of the A. S. verb *rídan* was in the singular *rád*, *ride, rad*, pl. *ridon*. Modern English has throughout *rode* (= *rál*).

In the verb *bid* we form an irregular preterite, *bad*, on the analogy of *sit*, pret. *sat*. But in *sit* A. S. *sittan* the *í* represents an original *e*, altered according to the A. S. rule of infection or umlaut through the influence of a succeeding *i*. Thus *sittan* is for **setjan*, and *a* is the regular vowel for the preterite of a present stem in *e*.

Sometimes, though more rarely, we see a connexion arise between two distinct forms as the result of pure phonetic change—forms which were originally distinct becoming coincident. Thus *ῥς* represents at once *ῥος* and *ῥος*; *εῖ*, both **εῖσι*, Epic *ἐσ-σί* and *εῖσι*. Germ. *laden* stands for O. H. G. *ladon* (to invite) and *hladan* (to load).

On the other hand, whether from a desire for intelligibility or under the influence of analogy, forms which would become coincident are differentiated. The gen. plur. of the O-declension in Latin is formed after the pronominal declension (*deōrum*), perhaps because the form *deum* would not be distinguishable from the acc. sing. The neuter *ἐστός* is used instead of *ἐστώς* (= *ἐσταός*) to avoid identity with the masc. *ἐστός* (= *ἐσταός*).

Analogy then, it has been said, is not to be considered as a fatal impulse to bar the road for the regular phonetic develop-

ment of a language, but it works alongside of the merely mechanical force of memory as an important factor in the learning and practice of a language, affording an easier connexion between the earlier and later forms than would be given by memory alone; on the one hand producing, as against the disintegrating action of phonetic law, a connexion in sound between words connected in meaning, and on the other hand abolishing the meaningless identity of sound in forms that are distinct in function.

Analogy
operative
at all
periods.

It has been objected to the recognition of Analogy as a principle operating at all times in language that analogical forms become more numerous the later we trace the records of a language; it is therefore argued that in the earlier stages such forms must be comparatively rare, and in the primitive language non-existent. But we cannot suppose the factors producing a change of language to have been different in early times from those operating now. As we, of necessity, presume the physiological conditions to have been the same, so we must suppose the mental conditions to have been. Otherwise we should have to operate with some other principle whose mode of action is unknown. For the difference between the various Indo-European languages at the time when they first come into view is too great to be accounted for by purely phonetic causes. We cannot therefore ignore the action of analogy at any period in the history of language, and it is less dangerous in doubtful cases to ascribe to analogy what may be the result of phonetic law than to reverse the process. For in the last event we are establishing a principle which affects all similar cases, while in the former our mistake, if a mistake it is, only affects a single case. Everywhere we must suspect the influence of analogy, and must appeal to phonetic law only in cases which cannot be accounted for on the ground of association. Especially must analogy be looked for in forms which are part of a system, and indeed it is only those isolated instances which are not part of a system, which give any secure basis for establishing a phonetic law. We should not, e. g., be justified in saying that Indo-European

qt = Greek *πτ*, from a consideration of *λείπτός* (= *leigtós*), as here we have the connexion of *λείπω* and the whole verb system. But isolated cases like *πέμπτος* (= *penqtos*), where there is no room for association, afford a safe ground on which to establish the law. We must look not so much to the quantity of the instances as their quality, i. e., their immunity from association.

It remains to say a few words about problems, to which the Germans give the name of glottogonic, problems that is concerning the origin of word-forms and their elements. We have seen that this was the main point to which Bopp and his successors directed their endeavours. They were not content to establish a primitive Indo-European form, but wished to go further still, and shew how this form itself arose. To attempt this is the same as in a single language to attempt to go beyond the literary tradition, beyond, e. g., Homer and the Vedas, into a region where the material for comparison fails us. But we may distinguish three kinds of problems. It is possible to trace the history of a sound successfully. As even Herodian reduced *εἰμί* to *ἐσμί* on the analogy of *ἐστί*, so we are justified in referring *ἵππος* to an original stem *ekho*, on the analogy of the Latin *equus*. It is possible also to trace historically the syntactical function of a word, to prove, e. g., that the relative *ὅς* (*ios*) was originally demonstrative. But when we come to trace the origin of the component elements of a given form, the case is different. If we knew, e. g., the meaning of the element *-ie-* (*-i-*) of the optative we should gain an insight into the relation between the potential and volitional meanings of this mood. But all such attempts have hitherto failed. It is for instance very probable that the personal terminations *-mi*, *-ti* may be respectively connected with the Latin *me* and the pronominal *to*, but all such attempts to analyze *-si*, *-masi*, etc., have failed. It does not help us to say, with Curtius, that the phonetic laws in operation in earlier times may have been different from those in operation at a later date; for a phonetic law can only be established in one case by quoting analogous instances, which

here fail us. And there is no necessity, even if the element *-si* is pronominal, to derive *-masi* from *ma-tva*. Double roots for the personal pronouns are not unknown. We need only quote *ahám*, ἔγωγ, *ego* beside *má-hyam*, ἐ-μέ, *me*. Nor indeed need the element *-si* be pronominal at all: it is certain that the Latin termination *-mini* in *ferimini* is participial, and it is probable that Sanskrit *-tād*, Greek *-τω* of the imperative is the ablative of a past participle (cf. ἔρω and ἰρός). Such formations may have been more common than has been supposed in primitive times. Glottogonic hypotheses, though only to be rejected when entirely baseless, cannot be proved, for the facts at our command are too few to admit of certainty. We do not know when and under what circumstances roots served the function of words; we know nothing of the history of inflexion within the limits of the primitive speech. We find in existing languages different roots; in the noun, stem-forming suffixes and case endings; in the verb, tense-stems, mood-stems and personal endings. We can trace the effect of the presence of these different elements, but our knowledge is not sufficient to enable us to pronounce with certainty upon their origin and meaning. For the present we have to be content with plausibility and probability in individual instances; wider and deeper knowledge in the future may bring us closer to the goal of certainty.

Origin of
language.

The vexed problem of the origin of speech as a function of the human race is one which falls outside the province of this work. The connexion of thought and speech has been a difficulty unsolved since the days of the first work which has come down to us on the philosophy of language—the *Cratylus* of Plato. Plato recognized that language was neither the result of chance nor purely artificial, but he had no notion that the structure of a language could be built up by the instinct of men living in a semi-barbarous state. It is to the languages of semi-barbarous nations that the modern philologist chiefly looks. Art and design come later in the conscious processes of literary and cultivated languages: but in the speech of uncivilized nations and the dialects of the outlying districts of

civilization, the natural laws of speech remain untrammelled and the conditions of change and progress are more readily observed. The question of the origin of language can be approached from the psychological, historical and physiological sides. Psychology is concerned with the expression in words of thought and feeling. History shows us languages in their various stages of development, and enables us to group them into families. Physiology gives the physical conditions under which, in every variety of place and climate, the spoken sound is produced.

We have now brought to a close our brief survey of the Summary. past and present position of the Comparative Study of the Indo-European languages. The narrow limits of the field to which early inquirers were confined hindered the advance of the science till the beginning of the present century. The discovery of fresh languages has enabled men to make wider comparisons and frame more general laws. A more exact attention to the elements of words and the conditions of speech has led to a more rigorous application of phonetic laws. The apparent exceptions which cannot be explained by these laws are no longer banished to the limbo of sporadic change, but are accounted for by the working of association and analogy. Finally, we have seen that in explaining the elements of Inflectional suffixes the comparative method is inapplicable. Such endings as *-masi* cannot be analysed, because they are part of the inheritance derived from the original Indo-European speech, which from the nature of the case we cannot compare with any cognate languages. In such inquiries we are in a position analogous to that of those who sought to explain Greek and Latin words before the discovery of Sanskrit. The data of comparison are wanting, and therefore many glottogonic problems must remain unsolved.

CHAPTER II.

THE INDO-EUROPEAN LANGUAGES.

The Indo-European languages.

THE result of the researches of Bopp and his successors has been to show that a majority of the languages and dialects of Europe, as well as a number of Asiatic languages, can be grouped together as common descendants from a single parent-speech. Before passing on to consider the phenomena of Greek and Latin, and their relation to the parent-language, it will be well to give a short enumeration of the different members of the Indo-European family. The names of Aryan, Indo-European, and in Germany of Indo-Germanic, are all applied to this community of languages. None of these names is entirely satisfactory. 'Indo-Germanic' omits all notice of Greek and Latin, as well as of the Celtic and Slavonic languages; 'Indo-European' includes too much, while the term 'Aryan' or better 'Arian' is also applied in a more restricted sense to the Indo-Iranian group. In the following pages we have adopted the term Indo-European.

Their mutual relations.

The Indo-European family consists of ten groups or smaller families of language, three of which are to be found in Asia and the rest in Europe. We are justified in distinguishing these different groups by observing that each is characterized by a great number of special elements—phonetic, inflexional, syntactical, and lexicographic. But while we admit that the several languages included under any one head are more nearly allied to one another than they are to the languages under any other head, we can in most cases say nothing of their mutual relation to one another. Broad distinctions, such as are exemplified by the treatment of the mutes, enable

us to class together the Indian, Greek, and Italic languages, for instance, on the one side, the German languages on the other; or to distinguish the Greek, Italic, Celtic, and German languages, where the palatal mutes remain mutes, from the Arian, Armenian, Albanian, and Letto-Slavonic languages where they become spirants. But we cannot go beyond this, at present, to say that Latin, for example, is more closely allied to Greek than it is to Celtic; nor is any adequate theory, in most cases, yet discovered of the mutual relations of the dialects of the several languages.

Nor again is the division necessarily exhaustive. The Macedonian languages, for instance, cannot be put under any of the following heads; while the extant fragments of many languages, such as the Messapian and Phrygian, are so small that no grammar of them is possible.

We will now proceed with our enumeration.

1. The Indian family comes first, of which Sanskrit is the head. The name Sanskrit is properly applied only to the literary language of the priestly caste of the Brahmans, and is distinct from Páli, the sacred language of Buddhism, as well as from the languages of modern India. The oldest form of Sanskrit appears in the Vedas or sacred hymns; the later or classical Sanskrit is the language which conformed to the rules of the native grammarians. The Indian family.

2. The next group is the Iranian or Persian, consisting of the Old Persian, so far as it has been preserved in cuneiform inscriptions, and the Zend or Old Bactrian, which is the language of the Zend-avesta or sacred books of Zoroaster. Its modern representatives are to be found in Persia, Afghanistan, and Kurdistan. The Iranian.

3. The Armenian family comprises the dialects of Armenia, which have recently been proved to belong to the Indo-European stock Hübschmann, (*K. Z.* xxiii. 5). Its principal characteristic is the possession of the vowel *e*, which distinguishes it from the other Asiatic languages of the Indo-European family, and connects it with the European branch. The Armenian.

4. The Greek family comprises the different dialects of ancient The Greek.

Greece, both on the mainland and in the islands and colonies, and their modern representatives. The traditional division of these dialects, resting on the myth of the sons of Hellen, distinguishes Doric, Aeolic, and Ionic. This division is better suited to literature than to the spoken dialects, unless we understand Aeolic to include all that is not Doric or Ionic. The subdivisions of the spoken Greek were in reality innumerable and their mutual relations are not easy to determine. A broad division may be made by a dichotomy into Ionic and

Ionic.

Ionic was spoken in the Ionian colonies of Asia Minor, in the Cyclades, and in Euboea. According to Herodotus (i. 142) there were no less than four varieties of this dialect in the Ionian Dodecapolis. The grammarians distinguished an old and a new Ionic, the language of Homer and the language of Herodotus. The language of Homer is in the main Ionic, but it is possible to trace forms of Aeolic origin, due perhaps to Aeolic lays out of which the epic poems were constructed. Aug. Fick has even gone so far as to maintain that the Iliad and the Odyssey were originally composed in Aeolic, and to rewrite the poems upon that hypothesis. However this may be, the texture of the language of the poems, as we have them, is Ionic. With Ionic the dialects of Attica are closely connected. Attic preserved, in many words, the original $\bar{a}$ for the Ionic η : it is distinguished into the Old and the New Attic. The Old Attic is the dialect of the tragedians and Thucydides, and bears a nearer relation to Ionic than the New Attic, which was employed by the comic writers and the orators. New Attic writes $\tau\tau$ for $\sigma\sigma$, $\sigma\acute{\upsilon}\nu$ for $\xi\acute{\upsilon}\nu$, $\rho\rho$ for $\rho\sigma$, and a for α in such words as $\alpha\epsilon\rho\acute{o}s$, $\alpha\epsilon\acute{\iota}$, $\epsilon\lambda\acute{\alpha}\alpha$, etc.

Doric.

Of the non-Ionic dialects Doric in its different varieties extended over the south and east of the Peloponnese as far as Megara, the southern Cyclades and Sporades, Crete, Rhodes, the Dorian towns in Asia Minor and the Dorian colonies. The most prominent characteristic of Doric, as a whole, is the use of $\bar{a}$ for Ionic η , the $\pi\lambda\alpha\tau\epsilon\iota\alpha\sigma\mu\acute{o}s$ which is spoken of by Theocritus (15. 88). Doric too preserved the digamma and

did not change the dental to a sibilant in such words as *δίδωμι* (= *δίδωσι*), *τύπτουσι* (= *τύπτουσι*). Further differences will be noticed in the treatment of the separate sounds and their combinations.

Under the head of Aeolic are usually classed the dialects of Lesbos, Thessaly, Boeotia, Cyprus, Arcadia, and Elis. It is hard to determine exactly the mutual relation of these different dialects. At the head stands the Lesbian, which is represented in the lyric fragments of Alcaeus and Sappho. It is marked by the retention of the original *ā* where Ionic has *η*, by the avoidance of the oxytone accent, in which it resembles Latin, and by *ψίλωσις* or the use of the smooth breathing, e. g. in *ἵππος*, *ἔτερος*. Other distinctive features will be noticed subsequently. The other Aeolic dialects are known chiefly from inscriptions. Aristophanes, it is true, has introduced a Boeotian speaking in the *Acharnians*, but a comic writer is not always faithful in his representations. The dialect of northern Thessaly is related closely to that of Lesbos and Boeotia, while Arcadian and Cyprian may be classed together: from Herodotus (vii. 90) we know that there were Arcadian colonists in Cyprus.

In the literature of Greece each form of composition adhered to the dialect in which it had at its origin been written. An Athenian of the fourth century would not have written an Epic poem or a choral ode in the Attic dialect; a Spartan playwright, if such there could have been, would not have written tragic *senarii* in Doric. With the exception of lyric poetry, the chief forms of literature found expression in the Ionic and Attic dialects. It was the Attic dialect which became supreme in the world of literature and of politics, and it is round the Attic that we group the other dialects of ancient Greece. Under the Macedonian Empire it lost its purity, and gradually passed into the *κοινὴ διάλεκτος* of the grammarians, which is represented by the writings of Polybius and Plutarch. The vulgar speech, which admitted words and constructions of foreign origin or earlier Greek usage, formed the basis of the Hellenistic Greek of the LXX and the New

Testament. Out of the *κοινή* have been developed the modern Romaic dialects which belong to the Greek group.

The Albanian.

5. The Albanian is classed apart from the Greek family, but of its earlier history we have no records, so that it is difficult to speak with certainty of its relation to other groups.

6. The Italic family.

The Italian.

Some of the languages spoken in the Italian peninsula may be ignored for the purposes of this book. Of the Iapygian in the extreme south and the Ligurian in the north, very little is known, though the former, at any rate, is supposed by Mommsen to be Indo-European. With the Etrurian also we are too little acquainted to be able to speak with confidence.

The remaining languages divide themselves into two main groups—the Latin and the Umbro-Oscan.

α/ Latin.

The earliest remains of Latin date from about three hundred years before the Christian era. One notable characteristic of this language is that, if we except the distinction of the literary and the vulgar Latin, there is no tendency towards a subdivision into dialects till the time when it became the speech of the different provinces of the Roman Empire. The literary language naturally became more or less stereotyped at an early period, and still more entirely so in the epoch which was initiated by Lucilius and concludes with the Augustan Age. The fact that so many Roman authors were also grammarians was not without its effect in establishing a pure standard of Latinity to which all classical models conform. The vulgar Latin, on the other hand, was the speech of the common people, and it was this form of the language which passed into the *lingua Romana* of the Empire and gave birth to the eight Romance languages of Southern Europe¹, Portuguese, Spanish, Catalan (in North Spain and Roussillon), Provençal, Italian, French, Rhaetoromanic (in the Tyrol, Engadine, etc.), and Roumanian or Wallachian.

¹ On the Romance languages see especially Diez, *Romanische Grammatik*, and Gröber's articles on 'Sprachquellen u. Wortquellen des lateinischen Wörterbuchs' in *Archiv für lat. Lexicographie*, I. pp. 35 sq., 204 sq., 539 sq., etc.

The Umbro-Oscan group consisted of the Umbrian, spoken ^{Umbro-} in the east or north midlands of Italy, and the Oscan, spoken ^{Oscan.} in the south midlands. The dialect of Falerii was perhaps Oscan, but nearly akin to Latin; the Volscian and Sabellian were varieties of Oscan.

Umbrian is best known to us from the Eugubine Tables, Umbrian. discovered at Gubbio (Iguvium) in the 15th century. These tables contain a code of religious ceremonial, and are written partly in the national alphabet and in an older dialect, partly in a newer dialect and in Roman letters. The national alphabet was borrowed from Etruria, and accordingly does not contain the letters O, Q, X. It has a peculiar sign for F, using the digamma to represent V. It has no Z (Greek *Zeta*, Semitic *Tsadhe*), but in its place another sibilant representing the Semitic *Zayin*. It does not distinguish G, D from K, T; but before the palatal vowels I, E it has a special symbol **Δ** to represent a palatalised guttural or sibilant. This in the inscriptions in Roman letters becomes Š or S (e. g. *ši-mu*, Lat. *cis*; *tšit*, Lat. *decet*; *fšia*, Lat. *faciat*). We find also between vowels and at the end of a word a modification of D, which in the national alphabet is written Š, in the Roman, R or RS. This fact explains the Latin *ar-biter*, *ar-fuerunt*, *ar-vorsus*, *ar-cesso*, which are borrowed forms, so far at least as the prefix is concerned. For the Latin *qu*, representing the hard velar guttural, we have in Umbrian *p* (*pis*=*quis*, *pumpe*=*quomque*, etc.). The soft velar becomes *b* (*benust*=*venerit*, *berus*=*verubus*). An intervocalic *s* mostly becomes *r* (*eru*, *erom*=*esse*), but we find *asa* (abl.)=*ara*. Final consonants, especially *m*, *s*, *t*, are often lost, a fact which agrees to some extent with the practice of Latin at one period and of the Romance languages.

In inflexion some of the most interesting points are the following: the termination *s* in the gen. sing. and nom. plur. of the A- and O-declensions (*tutas* or *tutar*=*urbis*, *urbes*); the maintenance of a locative; the termination *-ns* of the acc. plur. appears as *-f* (*asaf*=*aras*); the infin. ends in *u(m)* (*aferum*=*circumferre*). With this has been compared the Latin *venum do*). The sigmatic future is preserved, e. g. in *beniest* (*veniet*),

habiest (*habebit*), *staheren* (*stabunt*); there is a perfect in *-fi* corresponding to the Latin form in *-vi*; the pres. subj. has *a* as its characteristic vowel (e.g. *fasia*=*faciat*, *portaia*=*portet*, *etaians*=**itent*). The vowel of the A-conjugation is preserved in *stahu* (*sto*), *subocan* (*subvoco*), etc. The forms *teṛa* (= *det*), *diṛsas* (= *dent*) are of interest as preserving the reduplication of the present stem (*te-ṛa*=*di-de-t*).

Oscan.

The Oscan dialect is chiefly known through the Tabula Bantina, discovered in 1793 and containing the Roman laws for the town of Bantia. The alphabet is sometimes in the Umbro-Oscan characters, sometimes in Roman, occasionally in Greek. It is without O, Q, X, but has two forms of I, one, written *ɿ*, and subsequently adopted by Claudius for the Roman alphabet (see p. 55), being a close *e*, and two of *u*, one being a close *o*. Oscan distinguished G from K, and D from T, and used doubled consonants, which the Umbrian did not.

Oscan, like Umbrian, represents Latin *qu* by *p* (*pam*=*quam*) and the velar *g* by *b* (*kumbened*=*convenit*); *s* remains between vowels, but sometimes passes into *z*, as *ezum* (= *esse*), but *Fluusaí* (= *Florae*). The termination *d* is found in the abl. sing. (*suwad*=*sua*), in imperatives (*estud*=*esto*), and in adverbs (*ehtrad*=*extra*). The termination *-s* is found in the gen. sing. of the A- and O-declensions and in the nom. plural of the O-declension. Feminines of the A-declension end in *-u* (*viu*=*via*). We find sigmatic futures (*didest*, *deivast*) and infinitives in *-um* (*deicum*=*dicere*)¹. The A- and consonantal conjugations are the only ones existing.

Relation to
other lan-
guages.

As to the question of the connexion of the Italic languages with the other branches of the Indo-European family, it is difficult to say much. The earlier scholars were struck with the obvious resemblance between Greek and Latin, not merely in structure but in vocabulary, and till recently the existence of an original Graeco-Italic period in which the Greeks and Latins lived together as one people, distinct from the

¹ This looks like the accusative of a verbal noun; cf. the corresponding infinitives in Sanskrit from verbal nouns in *-tu*—e.g. *itum* from root *i* (Whitney, § 968).

other members of the Indo-European stock, was accepted as an unquestioned hypothesis. The theory is familiar in England from the early chapters of Mommsen's history, where the identity of some of the most important words in the vocabularies of the two languages is set forth with all the historian's persuasiveness, but with perhaps a certain disregard of the difference between fact and theory. Very many of his instances are not to the point, for the words he adduces, though common to Greek and Latin, are not peculiar to these two languages. A common Graeco-Italic period is no more proved by the identity of *ἀγρός* and *ager* than a common Graeco-Gothic period is proved by that of *ἀγρός* and *akrs*, or a common Indo-Italic period by that of *αἶρας* and *ager*. Professor Nettleship, in an *Essay on Early Italian Civilisation*, has recently shown that many of the names of the commonest objects in Latin are either peculiar to that language or find their representatives not in Greek, but in some other members of the Indo-European family. And when we come to the evidence of the structure of the language, the result is even more striking. For in those features which are most characteristic of the Italic languages, they stand in closest relation not to the Greek, but rather to the Celtic branch. The passive in *-r* and the future in *-b-*, the most noticeable points in the Latin verb-system, find their counterpart in Celtic.

It is not however possible to substitute an Italo-Celtic for a Graeco-Italic period. All that we can insist upon is that Latin is not more nearly connected with Greek than with other branches of the Indo-European family. The connexion of the two nations is of course close and intimate, but it is historical rather than genealogical, the result of intercourse reaching back perhaps to the times of their earliest occupation of their respective peninsulas, rather than of an original union maintained unbroken till the two peoples separated at the head of the Adriatic Gulf. We are justified in grouping together the Latin and the Umbro-Oscan languages as closely related and as distinguished from the other languages of Italy and from the non-Italian languages of the Indo-European

family; but our data do not allow us in this case, nor perhaps in any other, to go into greater detail.

The Celtic family.

7. The Celtic family, once widely extended, is now to be found only in the north-west of France and portions of the British isles. There is a northern group, consisting of Irish, Gaelic, and Manx, and a southern group, composed of Cymric, Cornish, and Armorican.

The Teutonic family.

8. The Teutonic family may be divided into two main groups: the eastern, comprising ancient Gothic and Scandinavian with its subdivisions; and the western, consisting of English, Frisian, Low and High German. Our knowledge of Gothic is confined to the fragments of the Gothic translation of the Bible made by the Arian bishop Ulfilas in the fourth century. The Scandinavian group, which goes most closely with the Gothic, comprises Icelandic, Norwegian, Danish, and Swedish. The western group is not so regular in its sound-system or its inflexions. English, Frisian, and Saxon go together; from Saxon sprang the later Low German dialects. High German is distinguished from the other Teutonic dialects by a different treatment of the mutes. From High German and its dialects sprang the speech of the greater part of modern Germany. For a statement of Grimm's law of the permutation of consonants and the relation of the German to the Classical languages of Southern Europe, see *ch.* xi.

The Baltic family.

9. The Baltic family contains the three divisions of Old Prussian, Lithuanian, and Lettish.

The Slavonic family.

10. The Slavonic family is divided into two main groups. The southern includes Russian, Bulgarian, Servian, and Croatian; the western, the Czechish and Polish dialects. The name Church Slavonic refers to the oldest Slavonic texts, dating back in some cases to the twelfth century and written for the service of the Church.

Schleicher's classification of the Indo-European languages.

The above are the ten chief divisions into which the primitive Indo-European language has split. To trace the process of separation and development is a more difficult task. Did our forefathers come, as has been usually supposed, from the plains in the neighbourhood of the Hindu-Kush mountains, or

was Europe, as some have lately imagined, the cradle of our race? In what order did the different languages break off from the parent stock? Schleicher has constructed a genealogical tree showing the successive migrations and bifurcations of the different Indo-European groups according to his view of their relations to one another. The Indian and Iranian groups he supposed to be the most ancient, and they remained nearest to the primitive home of the race. The first to split off were the Slavonic and Teutonic groups, who were followed by the ancestors of the Greek, Italian, and Celtic nations of Southern Europe. But though there are features common to the members of these different groups distinguishing them from other groups, yet each individual member of one group may have features in common with a member of another group, which has been classified apart. Thus Schleicher has made a distinction between the Asiatic and European families, yet one of the features common to the Asiatic group, namely the change of original palatal *k* into a sibilant, is also a feature of the Slavonic languages of Europe. A second point of difference was that Europe had the softened *l* where the Asiatic languages retained *r*; and a third that whereas the European languages possessed the vowels *a*, *e*, *o*, the Asiatic had *a* alone¹. It is true that Iranian and Indian have only the symbol *a*; still, as we shall prove later on, these languages once possessed the other vowel sounds, though in writing they represented them all by *a*. The hypothesis of the splitting of the *a*-sound is erroneous, as will be demonstrated hereafter from the laws of palatalization in Sanskrit. Apart from this too, Armenian, which ranks as an Asiatic language, has a vowel-system corresponding to that of Europe. Schleicher's genealogical classification will not hold good if carried through to all its consequences. By a rigid division into groups we are constrained to overlook the links which connect the individual members of different groups. Again, in dealing with

¹ It is still true that the Asiatic division, with the exception of Armenian, is distinguished from the European by the possession of only a single symbol for these different vowel sounds.

the features of resemblance between different languages, not every point of identity is to be regarded as an argument for original community of life. A word which is found in some languages only may once have been in use in other languages, though it has since disappeared, and the same may be the case with formative elements, such as the augment, which appear in some languages but not in others. Even what are supposed to be new formations common to a group may by subsequent comparison be proved to have their equivalents in other groups, as has been the case with the *e* of the European languages (cf. Delbrück, *Stud. of Lang.*, p. 138).

Dialects of
the primi-
tive lan-
guage.

Genealogical classifications of the different Indo-European races are to be regarded with a sceptical eye. To begin with, we do not know how numerous was the primitive race before the era of separation. As we attribute to it not only the origin of words and sounds but also the inflexions of highly developed speech, the primitive language must have had a long past history, and should therefore have been the language of a numerous race. Such a race must have been spread over a wide extent of country, and in that case there must have been a tendency to dialectical variety. We need not assume that the primitive speech was homogeneous, or that it was not subject to the conditions which are everywhere present where language is spoken by a numerous race in an extensive country and in a primitive age, when communication is not developed. The differences then which we can discern in the languages of Europe may have begun in the dialects of the primitive speech before the Indo-Europeans left the plains of Asia, and afterwards have been increased. We must then, perhaps without a sigh, resign the use of such palatable compounds as Slavo-Germanic and Graeco-Italo-Celtic. A more satisfactory metaphor to represent the reciprocal relations of connected languages is that first put forward by Johann Schmidt in his work, '*Die Verwandschaftsverhältnisse der indogermanischen Sprachen*,' and since largely adopted by other scholars. Schmidt prefers to compare the different languages to waves; by which he means to imply that all

Schmidt's
'Wave-
theory.'

the languages of the Indo-European family formed once, as it were, a continuous whole, the adjacent parts standing in intimate relation to one another, and that the splitting into different types was the result of dialectic differences originating within small limits and gradually extending themselves so as to cover a considerable area. The relation of different languages on this hypothesis is to be explained as much by geographical as by genealogical considerations. Neighbouring dialects borrow from one another; but dialects widely separated in locality have no close mutual connexions. We may illustrate this by the Greek dialects. An original τ becomes $\tau\tau$ in Attic, Boeotian, and Euboean, and in these dialects alone, since Attica, Boeotia, and Euboea are contiguous districts; similarly Rhotacism is introduced into the later Laconian from the neighbouring Elis. Schleicher's metaphor of the tree and its branches implies that the 'fundamentum divisionis' between different languages or dialects is in each case one, and that the divisions can be made mutually exclusive. But this is contrary to the existing facts. If in the case of the Greek dialects we take the treatment of an original $\bar{a}$ as the 'fundamentum divisionis,' we shall have on one side the Ionic and Attic, on the other the rest of the Greek dialects. If we take the treatment of $\sigma\sigma$, the dialects of Boeotia, Attica, and Euboea will stand by themselves; if that of τ , the Arcadian, Cyprian, Lesbian, Ionic, and Attic dialects will form one group. No absolute dichotomy is possible, except with reference in each case to some one grammatical peculiarity, and any attempt to arrive at a final and absolute classification of languages in their relation to each other must therefore, from the nature of the case, be futile.

Mutual relations of the Greek dialects.

We may therefore conclude that the Greek and Latin languages, which will be the subject of our special attention, were once probably neighbouring dialects of the common speech, just as they afterwards became neighbours in their European home. They are the only Indo-European languages which have feminines of the O-declension, and their systems of accentuation are to some extent the same. The resem-

Mutual relations of Greek and Latin.

blances and differences of the two languages will be fully brought out in the following pages ; but there is no foundation firm enough on which to build the hypothesis of an original Graeco-Italic unity.

Latin and
the Ro-
mance
languages.

The mutual relations of the languages discussed above stand of course on quite a different footing from the relations which subsist between the *Lingua Romana* of the provinces of the Roman Empire and the modern Romance languages. Here we have both the mother tongue and the historical development of its descendants before our eyes. The Romance languages are directly descended from the *Lingua Romana* just as the Indo-European languages are descended from a primitive Indo-European speech. But in the one case we can verify the descent by historical inquiry ; in the other we have to assume and reconstruct a parent speech based upon the similarity of its descendants. Consequently the Romance languages admit of a genealogical classification which with the wider extent and great antiquity of the whole body of Indo-European languages is only problematical.

Morpho-
logical
classifica-
tion.

Language consists of words, grammatical forms, and syntax. Morphological as distinguished from Genealogical classification is based upon systems of grammatical forms, and it is by these that languages can be best distinguished into groups of larger or smaller extent. It is in its system of grammatical forms that the identity of a language lies. Syntax and vocabulary may change, but if the grammatical system remains, the language is still the same.

Upon this principle of classification there are three great families of speech : Radical, Agglutinative, and Inflexional, distinguished according to the way in which they combine the root or central significant elements of speech with the formative elements which mark the distinctions of person, number, gender, tense, mood, or case.

Inflexional
languages.

In the Inflexional group, to which belong all the Indo-European languages, there is, as we have already noticed, a distinction between roots Predicative and roots Pronominal. From the combinations of these two different sets of

roots arise the different parts of speech and their several inflexions. In the Inflexional type of language roots have no separate existence apart from words. In any Greek or Latin inflexion we discover the root, or main significant element which we can trace no further back, by a process of analysis. The terminations or formative elements, which were probably Pronominal in origin, have no independent meaning apart from the connexion in which they occur. The question of roots and suffixes however, their nature and combinations, will be discussed more fully under Vowel Gradation and Morphology.

To the Inflexional type also belong the Semitic languages ^{Semitic languages.} of Hebrew, Phoenician, Assyrian, Syrian, and Arabian. These languages are distinguished by the triliteral character of their roots, which must consist of three consonants, and by internal changes in the vowels admitted into the root. Their grammatical system is quite different from that of the Indo-European, as for instance in their poverty of moods and tenses. Though the Semitic languages admit of being grouped together, there is no family which shows such strong features of resemblance as the Indo-European group, or enables us to trace so readily the various processes of linguistic change and development. Hence it is the Indo-European group which has provided the material on which the science of language rests.

The Radical or Monosyllabic languages, like Chinese, use ^{Radical languages.} roots as independent words, which depend for their meaning upon their position in the sentence. In such languages we find no formal distinction of the parts of speech, no inflexion, no derivation. They form a small minority of languages.

Between the Radical and the fully Inflexional languages ^{Agglutinative languages.} come the Agglutinative languages, approximating in varying degrees to one or other of the two extreme types. The characteristic of the Agglutinative languages, as a body, is the partial fusion of the radical elements, one of which bears the leading idea, while in the others the individual meaning is

obscured. But as the fusion of the elements of words is a question of degree, we can draw no hard and fast line of distinction between Agglutinative and Inflexional languages.

In this work we are only concerned with the Inflexional languages of the Indo-European family. Still we may add, under their different heads, some of the chief languages of the other families.

The Radical or Monosyllabic languages are few in number and are found in South-Eastern Asia; namely, Chinese, Tibetan, Burman, Siamese, and Annamese.

The Agglutinative languages are the most numerous. Under this head we reckon the various languages of Africa, viz. the Hamitic, including the speech of Egypt and Northern and Eastern Africa; the Bantu or South African family, and the languages of the Negroes of Central Africa. Besides these we have the languages of Papua and Australasia, the Malay-Polynesian group, embracing the islands of the Pacific, and South-Eastern Asia. Next the Dravidian or South Indian family of languages; the Ural-Altaic, which includes Turkish, Finnish, and Hungarian; and the mass of different languages upon the American continent. In Europe we must notice as Agglutinative the languages of the Basque people in the Western Pyrenees.

CHAPTER III.

SOUNDS AND THEIR CLASSIFICATION.

SCIENTIFIC philology, whether comparative or historical, is based upon the actual sounds of the various languages with which it deals, and therefore to determine their nature it must depend upon the sciences of Physics and Physiology, the one to furnish the acoustic analysis of single sounds, the other to inquire into the functions of the different organs of speech. Unless we are accurately acquainted with the nature of the various sounds and the different organs by which those sounds are produced, the science of language does not rest upon a basis of phonetic fact, but becomes a mere enumeration of the changes of letters in the various alphabets of different nations. Letters are but the symbols of sound, and we must be assured of the facts which such symbols represent, for the same sound need not have the same symbol in every language. Phonetic change could best be observed in the language of a nation which was conscious of the scientific relation of the letter to the spoken sound, and changed its spelling whenever a change of pronunciation became general; a nation which was endowed with a sort of orthographic gelatine delicately responsive to the rays of popular pronunciation. Our own spelling, for instance, is stereotyped, but matters would not be improved if we each and all spelt according to our pleasure. Pym and Shakespere spelt their names in any fashion they pleased, but they were not therefore more scientific than the Cholmondeley of to-day. Spelling ought properly to be a scientific representation of the spoken

Literary
and natural
language.

sound, remaining stereotyped until the spoken sound has changed. The laws of the changes and relations of different sounds can be best observed in the facts of living language, and more clearly in the spoken than in the literary dialects or in the language of society, which are more open to arbitrary influences. We aim at determining the actual nature of the sounds of any given language, and at discovering their relation to the copies presented in the alphabetic symbols. In the case of savage nations the existing sounds have to be

Living and
dead lan-
guages.

fitted to an alphabet. The student of the comparative philology of the dead languages has not the advantage of being able to observe the living sound. He must content himself with the alphabetic signs, their transcription in words borrowed by one language from another, and the accounts given of them by ancient grammarians. On the other hand, the dead languages have this advantage, that in them we can trace sound-changes as represented alphabetically in their development from the start to the conclusion, and we can by analogy transfer to them the general laws obtained from a study of the phenomena of living speech. To prove the value of correct historical observation of the changes of the written sign, we need only refer to the law of consonantal change in the languages of northern and southern Europe, known as Grimm's law. Here, too, it might be pointed out that the discovery of fresh laws can be more readily made by the consideration of related groups, as was done by Grimm, than by dealing with isolated single sounds or letters. Dialects are important, as has been said above, because the language of literature and society compared with them is a mixture of speech and sound-forms of varied origin, and is also more subject to the influence of individual caprice.

Sounds in
combina-
tion.

Besides the study of single sounds isolated by analysis, phonetics are also concerned with those sounds synthetically arranged in syllables and words. Sounds are not isolated in the living speech, for isolation is the result of grammatical analysis. They appear in combination with other sounds; consequently, side by side with the nature of individual and

isolated sounds, philology has to consider the effect of different sounds upon one another when arranged in the actual combinations of a given language.

A musical sound is a regular periodic vibration of the surrounding elastic medium of the air, while a noise may be called an irregular vibration. Sounds can be distinguished according to their strength or loudness, which depends upon the amplitude of the vibrations, and according to their height or pitch, which depends upon the number of vibrations within a given time. In the case of different instruments—as, e.g., the human voice, a trumpet, a fife, or a flute—there is also a difference of timbre or quality in the sounds produced. Along with varying quality go varying harmonics, that is, the secondary tones which determine the character of the quality of a sound. So too the quality of a sound is affected by the vibrations it imparts to the bodies with which it comes in contact. The nature of sound.

The chief organs of speech are the lungs, and, speaking generally, the throat and the mouth. The organs of speech. The breath is expelled from the lungs and afterwards modified in the throat and mouth. From the lungs it passes into the windpipe, and thence into the larynx. At the top of the larynx comes the epiglottis, a valve which opens and shuts over the glottis or upper opening of the larynx, and which closes over it in swallowing. In the interior of the larynx are two ligaments, the vocal chords, forming an aperture which can be extended or contracted at will by the surrounding muscles. When the breath passes these ligaments, the pitch or height of sound is determined by the number of their vibrations, and the quality of the sound is further determined by the form taken by the mouth and throat; these have a note of their own which combines with the note which results from the vibrations of the vocal chords. The roof of the mouth behind the teeth consists of the upper or hard palate and the lower or soft palate (velum), of which the lower extremity (uvula) can close the entrance to the nose passage. Apart from speech the breath passes through the throat, mouth and nose without appreciable sound, and the different organs lie at rest. In order to

articulate, the passage of the breath is regulated and the position of the organs of speech is altered at will. A stream of air is drawn into the lungs and breathed out in bursts of different length and strength. Voice depends upon the contraction and vibration of the vocal chords; in the case of a whisper there is less, if any, vibration. A complete closing of the glottis causes a check analogous to the effect of *k* or any other mute sound. In forming non-nasal sounds the uvula is pressed up so as to cover the passage to the nose. The sound is nasalized if the passage be open, in the case of vowels as well as consonants. In the French nasals *en*, *vin*, *un*, there is guttural as well as a nasal element, not so much however as in the English *ng*. Other elements of sound, not represented in alphabets, are the transitional sounds which arise, when sounds are arranged consecutively in syllables and words, in changing from one sound-position to the succeeding. Thus *on*, *in*, *an* have in each case a different transitional sound in passing from *o*, *i*, *a* respectively to *n*.

Distinction
of Vowels
and Con-
sonants.

From the oldest times grammarians have divided the sounds of language into the two main divisions of vowels and consonants. Plato, in his *Cratylus*, distinguished between *φωνήεντα* and *ἄφωνα*, while with later grammarians *σύμφωνα* were divided into *ῥημιφωνα* and *ἄφωνα*. This classification, however, is based not on the nature but on the function of the different sounds; it throws no light upon the influence of single sounds on one another or their independent alterations. For instance, *m*, *l*, *r*, *n* are classed as consonants, and it is true that they perform the function of consonants, but yet inquiry into their articulation and acoustic analysis shows that there is no difference of principle between the sounds which these letters represent and the vowel-sounds. The old method of classification provides no definite line of demarcation between vowels and consonants, and hence the necessity for subordinate grouping into semivowels, liquids, nasals, etc. In many cases the functions of sounds are due to their position in syllables and words. In such words, for instance, as the English *saddle*, *riddle*, *captain*, *boatswain*, etc.; in ordinary pronunciation

the liquid or nasal has the function of a vowel; the words are dissyllabic, and sound as *saddl*, *ridll*, *captn*, *bosn*. But before vowel-sounds these same *l*, *m*, *n*, *r* do duty as consonants, e.g., in such words as *rite*, *night*, *light*, etc. The term consonant then is used in two senses; in one it means difference of function, in the other difference of sound character. The old division of consonants into *Tenuæ*, *Mediae* and *Aspiratæ* is of no scientific value, because we no longer take the same view of the sounds which the Alexandrian grammarians classified in this way. The *Tenuæ* are no longer regarded as bare or thin letters, nor is any scientific requirement fulfilled by calling letters *Mediae* because they are ranked between the *Tenuæ* and the *Aspiratæ*.

The number of separable speech sounds is infinite, and to classify them all is impossible. For practical purposes a limited number of types can be chosen, and upon their characteristics our definitions are based. The mouth space through which the breath passes has two outlets: one at the mouth, the other at the nose. Sometimes this breath passage is kept wide throughout, as in the case of vowels and sonants. Sometimes it is so far narrowed at a given point that the breath sounds against the narrow walls, as in *f*, *s*, *ch*, etc. Sometimes, again, the passage is closed at a given point, as in the case of the explosives, e.g. at the lips in *p*, *b*; at the teeth in *t*, *d*; at the palate in *k*, *g*. Besides these distinctions we have to note the part played by the bottom of the soft palate in closing or opening the nose channel.

A consonant is the sound or rather noise resulting when the breath is closely squeezed or stopped at some part of the mouth or breath passage. The main distinction between vowels and consonants is that in the case of vowels the sound which issues from the larynx is modified by the shape afterwards assumed by the open mouth passage, while in the case of consonants the noise results from the narrowing or stopping of the breath at a given point. In the case of a vowel the breath is vocalized by the vibration of the vocal chords, and passes through the mouth without check or

Classifica-
tion of
sounds.

Conso-
nants.

Vowels.

Classi-
fication
according
to place of
articula-
tion.

audible friction, but in the utterance of different vowels the mouth passage assumes a different form. The instrument, that is, on which we play, is changed. Vowels, like consonants, can be classified according to the place of their articulation. It is only recently that with vowels this principle of classification has been recognised; and its recognition is due to the labours of the English school, notably Bell, Ellis, and Sweet. Previously, attempts were in the main made to classify the vowels according to their sound, and secondarily to inquire into the mode of articulation. It was assumed that the original Indo-European language possessed only the vowels *a*, *i*, *u*, a supposition which later inquiries have set aside, and the other vowels were arranged between *a*, *i*, *u* in a pyramidal form, of which *A* was the apex, and *I* and *U* formed the base. But under this classification it was possible for a vowel with a simple tongue articulation to be put side by side with one which required a combination of tongue and lip articulation. By Bell's method of classification such distinct articulations are kept apart. Of course there is not with vowels, as with consonants, a stoppage of the breath either complete or approximate, but the places of vowel articulation are distinguished by the position of the tongue. Each new position of the tongue is accompanied by a fresh vowel sound, so that the number of vowels can be infinite.

Classifica-
tion of
vowels.

For purposes of classification, however, certain typical varieties are selected. Thus we have the *horizontal* positions of the tongue, according, that is, to the point in the front or back of the mouth at which the place of articulation lies; and the *vertical* positions, according to the distance of the articulatory portion of the tongue from the palate. According to the horizontal position of the tongue, i.e. its movement backward and forward, the vowels can be divided into guttural (back), palatal (front), and intermediate. *a*, for instance, is guttural; *i* is palatal.

According to the vertical position of the tongue, that is, its movements up and down, vowels can be distinguished into high, mid, and low. Thus the *e* in English *pretty* is high,

while the *a* of *man* is low. Every vowel sound can be distinguished into open or wide, and shut or narrow. In the shut vowels there seems to be a greater convexity of the surface of the tongue, and a sense of effort and tension in pronunciation. Thus in the word *bit* the vowel is open, but the same vowel is close or shut in the French *fini*. Besides this, again, there are the modifications produced by rounding or projecting the lips, which can affect all the vowels. By adopting the above means of classification, Sievers and Sweet, following Bell, furnish a list of thirty-six distinct vowel sounds; but as it is no part of the object of this work to establish an international alphabet for the expression of all the vowel sounds in modern use, we shall only take note of the familiar varieties which occur in the languages under our consideration.

An open guttural *A* occurs in *father*, *papa*. The same vowel, with lower vertical position of the tongue, appears in *man*, *hat*.

A narrow palatal *I* occurs in French *fini*, and the same vowel open appears in English *bit*. In both words the vertical position of the tongue is high.

A narrow palatal *E*, with middle vertical position of the tongue, is to be seen in French *été*, *aimer*. The same vowel is wide or open in English *head*, *end*. Of the vowel sounds modified by the action of the lips there appears a narrow guttural *U* in German *gut*, with high vertical position of the tongue, while the vowel is open in English *good* and *full*.

A narrow guttural *O*, with middle vertical position, is to be found in German *so*, *Sohn*, and with a low vertical position in English *lord*, *law*.

A wide guttural *O*, with low vertical position, occurs in English *not* and *dog*.

Consonants, as we have before remarked, are distinguished from vowels by the narrowing or stopping of the mouth passage, which in the utterance of vowels is kept comparatively wide and open. Consonants can be classified according to the place or form of their articulation, or according as they are

Classifica-
tion of Con-
sonants.

voiced or voiceless. Three places of articulation were recognised in older classifications, viz. guttural, dental, and labial. The discovery of Sanskrit led to the introduction of palatal sounds. In the original language, as will be shown at length later on, there were two sets of guttural or palatal sounds, i.e. the sound of *k, g* before the vowel sounds *a, o*, in which the agents were the tongue and the velum or soft palate, and the sound of *k, g* before the palatal vowels *e, i*, where the agents are the tongue and the hard palate. This distinction leads to important consequences in Sanskrit, Greek, and Latin.

Tenues
and
Mediae.

The consonantal system of the Greek and Roman grammarians embraced two kinds of mutes (i.e. sounds in which there is a complete stoppage of the breath), known to us under the Latin names of *Tenues* and *Mediae*. The so-called aspirates of the Greek *φ, χ, θ*, Lat. *ph, ch, th*, had at the time that system was put forward already (cf. Sievers, p. 115) become spirants: at any rate, we now pronounce *ph* and *ch* as spirants. The signs for the Tenues *π, τ, κ*, Lat. *p, t, c, k*, and the Mediae *β, δ, γ*, Lat. *b, d, g*, have passed into the writings of all western nations under the same names. Still *p, t, k* are in different districts differently pronounced, with stronger or with weaker stream of breath, while *b, g* are occasionally pronounced as spirants.

Under the term *Tenues* the old grammarians meant to include the unaspirated voiceless checks, under *Mediae* the unaspirated voiced checks: the classification was based upon the nature of the sound, and not upon the place of its articulation.

Place of articulation.

Proceeding now with classification according to place, we find foremost in the mouth the Labials or lip-sounds, formed either by both the lips or by the under lip and upper teeth.

Labials.

They are *p, b, m, f, v*, of which *f* is the voiceless spirant answering to *p*, and *v* the voiced spirant answering to *b*. Further back in the mouth come the different sounds produced with the tongue in contact with the roof of the mouth. Furthest back we have the guttural sound *k*, starting upwards from which any number of sounds can be pronounced at different

points of contact by the tongue and the roof of the mouth, whether dental (front), palatal (middle), or guttural (back).

Thus in the front of the mouth we have the *Dentals* *t*, *th*, *d*, *Dentals*. *sh*, *r*.

Further back the *Palatals*, which result from contact of *Palatals*. the tongue and hard palate, such as *k* and *g*.

Further back still we have the *Guttural* sounds, with *Gutturals*. articulation of the tongue and soft palate; which include the deep Semitic gutturals as well as the Indo-European *k*, *g* before *a* and *o*, and such sounds as the *ch* of German *ach* and the *ng* of English *sing*.

According to the form of articulation we can distinguish *Form of* Consonants into *Open* or *Fricative*, where the mouth passage *articulation* is narrowed but not completely closed, e.g. *s*, *f*, *r*, *z*, *v*; *Divided*, where the passage is stopped in the middle, but kept open at the sides, e.g. *l*; *Stopped* or *Explosive*, also called *Mutes*, where there is complete closure of the mouth passage, e.g. *k*, *g*, *t*, *d*, *p*, *b*; and *Nasals*, where the nose passage is left open, e.g. *m* and *n*. *N* takes its character from the nature of the neighbouring sounds; e.g. it is guttural in *sink*, but dental in *tent*.

Apart from their classification according to place and form *Voiced and* of articulation, consonants may be divided into *Voiced* and *Voiceless*. It is not easy to draw a sure line of demarcation between pure sonant vowels and voiced consonants. The difference lies in the comparative ratio of the energy of expiration and the width of the voice-passage. The letter *l*, for example, is before consonants a vowel like *a* and *e*, but when combined with a preceding or following vowel it is only semi-vocal, and becomes consonantal in its function. What is true of *l* is also true of the other semivowels *r*, *m*, *n*, as well as of *i*, the consonantal equivalent of which has been called the *yod*-sound, and of *u*.

The *Voiced* or Sonant consonants, in pronouncing which *Voiced*. there is a vibration of the vocal chords, are the *Nasals* *m*, *n*, and the liquids *l*, *r*, which, as we have shown, can perform the function of either vowels or consonants, just as *i* or *u* can; the

Mediae g, d, b, the aspirated *Mediae gh, dh, bh*, and lastly the spirants *z, j, v*.

Voiceless. The *Voiceless* or *Surd* consonants are the *Tenues p, t, k, q*, the aspirated *Tenues kh, th, ph*, and the *Spirants s, f*.

Glides. Besides the different sounds which we have classified, we have the introductory glides represented by the smooth and rough breathings. In singing a good singer begins from the outset with the voice, and allows no breathed introduction; in speaking there is an introductory breath before vowel sounds. If stress is laid upon this initial glide, there ensues the rough breathing *h*, in which the organs of the mouth are kept apart as for a vowel sound, but the vocal chords do not vibrate. The rough breathing may be regarded as an emphasised initial glide which varies in character according to the following vowel sound. It can also come at the end of a word. In this position the Sanskrit alphabet has a separate symbol for the rough breathing, called *visarga*, which is never original but is a substitute for final *r* or *s*. If no stress is laid upon the initial glide before a vowel, we have the ordinary smooth breathing.

Having now classified the different sounds which appear in different languages, we will go on to consider these sounds as represented in different alphabets.

Alphabets. A perfect alphabet would, as we have seen, correspond in the number of its symbols to the number of simple sounds in the spoken language. No alphabet does this; the symbols inherited from the past are constant, while the sounds they represent are continually changing. The symbols of our own alphabet are nearly the same as those of Latin; these last were borrowed from a Greek alphabet, and all the Greek alphabets were borrowed from the Phoenicians. Of the rise and progress of the art of writing in Greece we know but little. The poets give us different legends ascribing the introduction of the alphabet to Prometheus, Orpheus, Linus, Cadmus, or Palamedes. Herodotus (5. 58) says, categorically, that the art of writing, as well as other arts, was brought into Greece by the Phoenicians who came with Cadmus,

while before that time it was not known. It is more than doubtful whether it was known to the Greeks of the Homeric age. We have the *σήματα λυγρὰ* which Proetus gave to Bellerophon, *γράφας ἐν πίνακι πτυκτῶ* (*Z.* 168), and we have the marks put by the heroes on the lumps of clay which they cast into the helmet (*H.* 175); but in neither of these instances is there conclusive proof of actual writing. If the letters were known before the age of the Wise Men, yet they were not in common use; for wood, stone, and metal were materials too clumsy. The tradition of antiquity is summed up by Josephus (*c. Apion.* 1. 2.) where he says 'that the Greeks learnt the art of writing at a late date and after great difficulty. Those who wish to attribute to it the earliest origin boast of its coming from Cadmus and the Phoenicians. The poems of Homer were handed down without being committed to writing, and only in a subsequent age were reduced to writing and arranged in their present shape.' Assuming that the Greeks borrowed their alphabet from the Phoenicians, the last named were not its inventors. These industrious traders, the middlemen of ancient civilization, handed on to Greece the letters which they may themselves in the first instance have obtained for commercial purposes from Egypt, where an alphabet called hieratic had been developed from the older hieroglyphics. This is the probable history of the Phoenician alphabet. It became the parent of almost every alphabet, properly so-called, upon the earth: of the Semitic alphabets of Hebrew and Aramaic; of those of Italy and Greece; of those of the native inhabitants of ancient Spain; of the runes of the Teutonic and Scandinavian tribes, and of the systems of India and Abyssinia. The Phoenician alphabet as adopted in Greece is different both in the form and value of the symbols from the alphabet of Phoenicia proper. The most striking contrast lies in the fact that the original alphabet consisted solely of consonants; the vowels were not represented by special signs, but understood to be inherent in the consonants. The Greek alphabet had two main divisions, Eastern and Western. The Eastern division comprised the alphabet of Asia Minor,

Phoenician
alphabet.

Greek
alphabet.

the Ionian alphabet proper; the alphabet of the Aegean islands, Thera, Melos, Crete, and others, and the alphabet of the mainland of Greece, viz. Argos, and Corinth with its colony Corcyra, as well as the old Attic. The Western division included the alphabets of the rest of Greece and of the Sicilian and Italian towns, of which the most important were the Chalcidian colonies.

The earliest Greek alphabet was the Ionic alphabet, found in the inscriptions of Greek mercenaries upon the colossus of Abu Simbel in Egypt and dating from the beginning of the sixth century, or earlier still in the inscriptions in the sacred enclosure of Apollo at Naucratis, the emporium of Miletus (see paper on the Early Ionic Alphabet by Mr. E. A. Gardner in the *Journal of Hellenic Studies*, vii. 220).

Speaking generally, the Greeks adapted the Phoenician symbols to their own requirements as follows. Four of the Phoenician letters, *Aleph*, *He*, *Ayin*, and *Yod*, were employed to represent the vowel sounds A, E, O, I, while a new symbol was invented or borrowed elsewhere for *î* ψιλόν. The Phoenician *Fav* was retained in Greek as the digamma, *F*, which is still extant in inscriptions and is required by the metre in the Homeric poems, though it is not there represented by a special sign. These letters, along with Σ and the consonants Β, Γ, Δ, Κ, Λ, Μ, Ν, Π, Ρ, Τ, which were borrowed with little change of form, are the letters which, according to tradition, were brought from Phoenicia by Cadmus. Of the other letters the symbol Η was used in some Greek dialects, as in Italy, for the sign of the rough breathing. In the Ionic alphabet, as adopted in Attica, the rough breathing had no sign, but Η was employed as the sign of a vowel.

The Phoenician Ϝ, *Koppa*, fell into disuse; it survived longest in the alphabet of Chalcis, whence it passed into the Roman alphabet as Q. In classical Greek the sound of Ϝ was not distinguished from the sound of K, but Ϝ survives in old inscriptions. In Ar. *Nub.* 23 we have κοππαρίας used of a horse branded with this letter, just as the old σάν or

compound *σαμπῖ* (Hdt. i. 139) is preserved in the word *σαμφόρας* (Ar. Eq. 603; Nub. 122, 1298). Differences in the alphabets of different Greek districts may best be explained by assuming various centres of Phoenician influence. The Ionian alphabet came into general use throughout Greek speaking tribes in the fifth century. A special feature of this alphabet is the use of the symbol H to represent, not the Spiritus Asper, but the long open vowel *ē*. The same alphabet also distinguished between O and Ω. In the inscriptions of Naucratis, referred to above, we find the symbol Ω, showing that the distinction between O and Ω was early regarded as important. Mr. Gardner supposes that the symbol was taken from the syllabic alphabet of Cyprus, where the Milesians first met the Phoenicians in trading to Egypt.

If H and Ω were simply long varieties of E, O, it is odd that the Greeks should not have distinguished between long and short in the case of other vowels. Before the adoption of the Ionian alphabet in Attica, in the archonship of Euclides 403 B.C., E did duty for E and EI. Apparently then the symbol H was adopted to represent the same sound as the open *e* of Italian, and in the same way Ω represented not simply long *o* but a more open sound.

Z, earlier I, takes the place of Phoenician *Zayin*.

The letter Ξ, Phoenician *Samekh*, has in Greek a new name ξῖ. Before the archonship of Euclides this sound was in Attic represented by XΣ (*chs*). The Ionic Ξ does not appear in Italy, where the sound was represented by X (*cs*, *chs*). In the Ionic alphabet X (i. e. χῖ, *ch*) represents the hard guttural aspirate, though it holds the same position as the Roman X (*chs*).

The Greek σίγμα takes the place of Phoenician *Shin*. According to Herodotus (i. 139) the Dorians called σάν what the Ionians called σίγμα. This may point to a difference of sound and σάν represent the Phoenician sibilant *Tsaile*. The compound *σαμπῖ* is used to denote 900. The sounds of the Phoenician sibilants need not be discussed here.

The non-Phoenician letters, introduced into the Attic from ^{New let-}ters.

the Ionian alphabet in the archonship of Euclides, were Φ, X, Ψ, and Ω. The sounds of the Greek aspirates Φ, Θ, X were not, in all probability, fricative like the sounds of modern English *f* and *th*; they were momentary sounds followed in each instance by a distinct breathing. Thus X represents an English *k'h*. Before the introduction of the symbols Φ and X, the sounds were represented by the double letters ΠΗ, KH.

Roman.

The Roman alphabet was borrowed, in all probability, from that of the Chalcidian and Dorian colonies of Campania and Sicily. To this it owes the form of the letter L, of C for Γ, of X for Ζ, and the retention of the Koppa in the form Q. The Roman alphabet consisted originally of twenty-one signs, A, B, C, D, E, F, Z, H, I, K, L, M, N, X, O, P, Q, R, S, T, V. The signs Θ, Φ, Ψ do not appear as letters, but are kept as the symbols of notation for 100, 1000, 50; though in the case of the first two the form of the symbol is assimilated to that of the initial letters of *centum* and *mille*. The digamma keeps its proper place and sign, but it has a fresh value, that of the hard labial spirant, a sound unknown to Greek. The letter Z is found on a coin of Cosa, in Faliscan inscriptions, in the fragments of the *Carmen saliare*, and is common in Oscan and Umbrian, but early disappeared from the written language, as its sound merged in that of S.

The introduction of the letter G for the soft guttural is attributed to Appius Claudius (censor, 312 B.C.), or Sp. Carvilius Ruga (circ. 294 B.C.)¹. Before that time C represented both the hard and soft guttural, and it continues to represent the latter even in classical times in the abbreviations *C.*, *Cn.* for *Gaius*, *Gnaeus*. On inscriptions we find *ecfociont* (*effugiunt*), *pucnandod*, *leciones*, etc.

The sign K also disappeared early, as its sound became identical with that of C, but it is preserved before *a* in *Kaeso*, *Kalendae*, and the abbreviations KK (*castra*), KS (*carus suis*), etc.

¹ The letter G is now known to occur on the *as librale* of Luceria (c. 300-250 B.C.) (Edon, *Ecriture et Prononciation du Latin*, p. 145).

Y and Z were borrowed from the Greek alphabet in the time of Cicero to represent the Greek letters υ , ζ . These had been previously represented by u (as in *Aeguplus*) and ss (medial, e. g. *tarpassita*) or s (initial, e. g. *sōna*).

The emperor Claudius attempted to introduce three new signs— $\vdash$ for the middle sign between i and u , as in *optimus*, $\dashv$ for the consonantal u , and $\supset$ for ps , bs . But these characters did not survive after his death.

The alphabet of Aryan India, the *devanāgarī*, differed in many of the sounds it represented from the Greek and Roman alphabets. The actual symbols it will be no part of our duty to discuss. The written unit was not the simple sound but the syllable, and the substantial part of the syllable was the consonant preceding the vowel. The short vowel a , where not initial, is implied in the consonant. The signs for other vowel sounds in the interior of a word are attached to the consonants as subordinate. In the following scheme the diphthongs are omitted. Represented in our own letters we have :

Simple vowels a , i , u , r , l , both long and short.

Semivowels y , r , l , v (= English w).

Sibilants $ç$ (palatal), $ṣ$ (= sh , lingual), and s (dental).

Gutturals k , g , kh , gh , $\tilde{n}$.

Palatals c , j , ch , jh , $\tilde{n}$.

Linguals $ṭ$, $ḍ$, $ṭh$, $ḍh$, n . } In practice not to be distinguished by Europeans from one another. (Cf. Whitney, *Sk. Gr.* § 45.)

Dentals t , d , th , dh , n . }

Labials p , b , ph , bh , m .

Aspirate h and at the end of a word the *visarga* $ḥ$ as a substitute for final r and s .

We see then that Sanskrit has no symbols for the Greek and Latin vowels e and o , and that it uses r and l as vowels and consonants. Besides this, Sanskrit employs two series of sounds as guttural and palatal, and possesses the soft aspirates gh , jh , dh , bh , as well as the hard aspirates kh , ch , th , ph , which answer to the Greek χ , θ , ϕ . Further it distinguishes between dentals or teeth sounds and linguals or sounds uttered with the tip of the tongue, and has a nasal

answering to each of the different divisions of the explosive consonants.

Indo-European alphabet.

The Indo-European alphabet, as constructed from a comparison of the different Indo-European languages, was composed of the following sounds :—

Vowels $\tilde{i}$, $\tilde{u}$, $\tilde{e}$, $\tilde{o}$, $\tilde{a}$, and ə (the indeterminate vowel).

Semivowels $\dot{i}$, y , r , l , m , n .

Labials p , b , p^h , b^h .

Dentals t , d , th , dh .

Palatals $\tilde{k}$, $\tilde{g}$, $\tilde{k}^h$, $\tilde{g}^h$.

Velar Gutturals q , g , q^h , g^h .

Spirants s , z , j , v .

Liquids, when consonantal written r , l ,

when sonant $\tilde{r}$, $\tilde{l}$

Nasals, when consonantal written n , m ,

when sonant $\tilde{n}$, $\tilde{m}$.

Indo-European vowels.

Theory of Bopp.

Theory of Curtius.

It will be noticed that the original Indo-European language is said to have possessed the three vowels a , e , o . This is the theory now accepted by the best authorities on the subject. The earlier philologists, however, from the time of Bopp, observing the fact that the Sanskrit frequently has a where the European languages shew e or o , assumed that e and o were later weakenings of a in the several European languages. Noticing the fact that the final as of the Sanskrit *padas*, *pādas*, corresponded to the endings of Greek *ποδός*, *πόδες*, *πόδας*, it seemed natural to them to infer that the Sanskrit represented the original sound, of which the Greek shewed more recently developed variations. This theory was further developed by Curtius. He established the fact that when e is the vowel of a word or termination in one European language, it appears also in the same place in the corresponding European languages, and that it could not therefore have been independently produced in each. Accordingly he supposed that there was a time when the European languages, as a body, had separated from their Asiatic relations but had not yet divided into the two groups of North and South European; and that

in this period the vowel *a*, which they had inherited from the mother tongue, was 'split' into two distinct sounds, *a*, *e*, which thus passed from the common European speech into the various languages which sprang from it. According to this theory, the stem *bhar* (in Sk. *bharāmi*) passed unchanged into Europe, and there 'split' into the two forms *bhar*, *bher*. In the South as distinguished from the North European group there was a further splitting of *a* which resulted in the appearance of *o*; hence we have in Greek *φέρω*, *φόρος*.

This theory has been accepted up to comparatively recent times, but it has now been abandoned in favour of that which supposes *e* and *o* to be as much primitive vowels as *a*. The two great discoveries which have established this theory are those of the nasal and liquid sonants and of the velar gutturals.

I. According to Curtius, the vowel *a* in a stem like *τραπ-* in *ἐτραπον* has split, on European ground, into the vowels *e* and *o* in *τρέπω*, *τρόπος*. If it can be shewn that the *a* in *ἐτραπον* is not a primitive sound at all, but a special phenomenon peculiar to the Greek language, his theory of the priority of the *a*-sound will fall to the ground. This subject will be treated at greater length when we come to speak of the liquid and nasal sonants in detail; here it will be sufficient to notice the following points.

The stem of the strong aorist is obtained from the stem of the present, in cases where the present stem contains an *ε*, by expelling this vowel.

Thus from the present stem *πελ-* in *πέλ-ο-μαι* we get the strong aorist *ἔ-πλ-ε-το*: from *πέτ-ο-μαι* we get *ἔ-πτ-ό-μην*: from *πέιθ-ω*, *ἔ-πιθ-ον*: from *φεύγ-ω*, *ἔ-φυγ-ον*. In a precisely similar way from the present *τρέπ-ω* we ought to get a strong aorist *ἔ-τρπ-ον*. And there can be no doubt that this was the original form of the tense. In the Sanskrit, the liquids *l*, *r* are not merely consonantal, i. e. forming a syllable in conjunction with a vowel, but also under certain circumstances sonant, that is, capable of forming a syllable by themselves without the help of a vowel. This power they originally re-

tained in Greek and other languages : *ἐρπον*, if the liquid is consonantal, is unpronounceable ; but in such cases the liquid became sonant and developed a vowel sound in its immediate neighbourhood, a sound which in Greek was written *α*, and hence we get the form *ἐτραπον*.

This proves that the *α* of *ἐτραπον* is a later development, viz. the peculiar form under which the vowel sound of the liquid sonant appears, in Greek and cannot therefore be the primitive form of the stem of which *τρεπ-* and *τροπ-* are later developments. In the same way we may prove that the nasals *n*, *m* are under certain circumstances sonant—though in this case, in Greek at any rate, all trace of the nasal character of the sound has completely disappeared, and the character representing the sonant nasal is identical with that used for the pure vowel *α*. Thus *ἐπαθ-ον* is the Greek fashion of writing *ἐ-πηθ-ον* (cf. *πέλομαι* for *πενθομαι*).

II. The theory of nasal and liquid sonants proves that some European *a*'s are not primitive vowels ; by the theory of velar gutturals it is proved that *e* is a primitive vowel.

Palatal and Velar gutturals. In the original Indo-European language, as will be stated at greater length further on, and in Sanskrit, there were two sets of gutturals—the *Palatal gutturals* (in I.-E. *k̂, ĝ, ĝh, k̂h*, according to our notation, in Sk. *ç, j, h*), which always appear in the same form by whatever sound they are followed, and the *Velar Gutturals* (I.-E. *q, g, ĝh, qh* ; Sk. *k, g, gh*), whose treatment varies according to the sound before which they come. Before most vowels and consonants the velar gutturals remain unchanged in Sanskrit, but before the palatal sounds, *i, y*, they are replaced by the corresponding palatal consonants *c, j, h*. Thus we have from the same root *ark-ás* but *arc-ís*, *ug-rás* but *ôj-îyas*, *mágh-avan* but *mámh-îyams*. Now the same change between *k, g, gh* and *c, j, h* also occurs before the letter *a*, but as a rule only where that letter corresponds to a European *e*. We have, for example, *kálaras* (*πότερος*) but *ca* (*τε*), *gharmás* but *háras* (*θερεσ-*).

These facts point to the following conclusion : that *e* is a

primitive vowel of the Indo-European language, and as such is preserved in the European branches of the family; but in the Asiatic languages it became confused with *a*, and has completely disappeared as a separate sound. Traces of its original existence are seen in the fact that the Gutturals become Palatals before *a* only in those cases where *a* represents an original *e*. The *a* in *ca*, *háras*, that is to say¹, represents an original palatal vowel *e* and influences the preceding guttural in the same way as do the other palatal sounds *i*, *y*.

Thus it is proved that the vowel *e* existed in the original *e* and *o* primitive. Indo-European language. But the existence of *e* implies the existence of *o*. For, as we shall see later, *e* regularly alternates both in roots and terminations in all Indo-European languages with another vowel, which in Greek and Latin becomes *o*, in the Asiatic languages *ā* in open, *ä* in close syllables.

Compare, e. g., √ *γεν*, Sk. *jan* with *γέ-γou-a*, Sk. *jajāna*.

√ *δεκ*, Sk. *darç* with *δέ-δopka*, Sk. *dadárça*.

That is to say, the *ä* in *dadárça* and *ā* in *jajāna* both correspond to an original vowel alternating with the *a* (= *e*) in *jan*, *darç*, and represented in Greek by *o*. The vowel therefore represented by *o* in Greek, by *ä*, *ā* in Sanskrit, must have existed in the original parent language.

By these considerations it is proved, as against Curtius, that *a*, *e*, *o* are alike primitive vowels, and existed side by side in the original Indo-European language.

¹ This *a* representing an original *e* is often written *a^e*. In some books it is also written as *a*, and the Indo-European *o*-vowel as *a₁* or *a^o*; but there seems no objection to writing both respectively as *e* and *o*, and this notation is undoubtedly simpler.

CHAPTER IV.

THE SIMPLE VOWEL-SOUNDS.

AFTER the statement of the different sounds and their alphabetic representation, we will pass on to illustrate the correspondence of the simple vowels in Latin and Greek which represent the vowels of the primitive Indo-European language.

Indo-European *ǎ*. Indo-European *ǎ* appears in Greek as *ǎ*, in Latin as *ǎ*, answering to Sanskrit *ǎ*.

An original *ǎ* is represented by the short vowel of the vocative of the *a*-declension in Greek, e.g. *δέσποτǎ*, and by the suffix *-ǎ* of the instrumental singular which appears in Greek *παρ-ǎ*, *ἄμ-ǎ*, etc. (for Latin, see p. 62).

An original *ǎ* is to be seen in the following words:—

<i>ἄγω</i>	<i>ago</i> .
<i>ἄκ-ρος</i>	<i>ac-ies, ac-us</i> .
<i>δαπ-άνη</i>	<i>dap-es, damnum</i> .

Damnum is for *dap-num* just as *somnus* is for *sɛp-nus*, with which cf. Gk. *ὑπ-νος*.

<i>σαπ-ρός</i>	<i>sap-or</i> .
<i>δάκρυ</i>	<i>lacrima</i> .

Old Latin *dacruma* (Liv. Andr. ap. Paul. Fest. 68. 10).

<i>κάπρος</i>	<i>caper</i> .
<i>ἀπό</i>	<i>ab</i> .

P final is not found in Latin.

<i>ἀντί</i>	<i>ante</i> .
<i>καμάρα</i>	<i>camurus</i> .
<i>σαλ-εύειν</i> (for <i>σφαλ-</i>)	<i>sal-um</i> .
<i>κάπ-τειν</i>	<i>capere</i> .
<i>ἄξ-ίλη</i>	<i>asc-ia</i> .
<i>ἀγρός, ἀγρώστης</i>	<i>ager, agrēstis</i> .

κλάζειν (for κλαγίειν)	clangō (for clagno).
μαρ-αίνειν	mal-us.
παλάμη	palma.

The medial *α* in the Greek is the neutral or indeterminate vowel *æ*.

λι-λα-ιομαι for λι-λασ-ιομαι	las-civus, Lar-es.
λάπ-τω	labrum.
λαφ-ύσσω	la-m-bo.
μάκ-αρ	mac-te.
ἄγχω	ango.
ἄγκυλος	angulus.
ἄγκών	ancus.

Ancus appears in *ancilla*, *Ancus Martius*; for the last compare the Homeric θεράποντες *Ἄρηος*.

ἀρόω	arare.
ἄνεμος	animus.
ἄμνός (from ἀβ-νός)	ag-nus.
ἄξων	axis.
ἄλλος (ἄλῆος)	alius.
ἄλφος	albus.
ἀρκέω	arceo, arx.

Connected with the root of ἀρκέω but showing an interchange of *ρ* and *λ* we may compare ἀλκ-ή, ἀλαλκεῖν.

ἀργός, ἄργυρος	argutus, argentum.
ἄλς	sal.
*ἄω for ἀΐω, fut. ἄσω	aveo.
καλ-έω	cal-are.
ἄκ-αρον (Hesych.), ἀχ-λὺς	aquila, aquilo.
ἄπτω	ap-tus.

For the irrational aspirate of the Greek, cf. ἵππος beside *equus* and ἡμεῖς beside *āμμε*.

καπ-ύω, καπ-νός	vap-or (for kuapor?), vap-pa.
μάχ-ομαι, μάχ-αιρα	mac-tare, mac-ellum.
μαδ-άω, μαδ-αρός	mad-eo, mad-idus.
λάγ-νος, λαγγ-άζω	lac-sus, langueo.
ἄβιν· ἐλάτην Hesych.	ab-ies.
ἀκχός· ὤμος Hesych.	ax-illa, ala (for ax-la).
ἄχυρον, ἄχνη	agna.

βάκτρον

(baculum).

βάκτρον can hardly be separated from βαίνω, Indo-European $\sqrt{gem}$, to which it is related as *θήκη* to *τίθημι*: initial *g* before a vowel cannot become Latin *b* (cf. p. 139).

κάδος

cassis (cad-tis), cadus.

ἄρθρον

artus, armus.

ἄρπάζω

rap-io, rap-ax.

In the Greek there is metathesis of the *r*, I.-E. $\sqrt{sarp}$.

ἄν-αλτος

alo, alumnus.

καν-άζω

cano.

φράσσω

farcio.

φράσσω for φρακ-ω with metathesis of the liquid (cf. Meyer, *Gk. Gr.* 259).

ἄλλομαι for σαλ-ιομαι

salio.

ἀλκυνών

alcedo.

Cf. I. 563, but Attic ἀλκυνών, by popular etymology from ἄλς.

ἀράχνη

aranea.

βάρβαρος

balbus.

βάλανος (*gl*-)

glans.

γάλακτ-, γάλαγ-ος

(g)lact- (?).

κάρταλλος, κάρταλον }

Hesych.

cartilago, crātes.

κράμβος

carbo.

μάλβαξ, μαλάχη

mal-va.

πάλη

palea.

πλάξ

planca (for plac-na).

πράπιδες

palpito.

χάλαζα

grando.

τε-ταγ-ών

tango, conta(g)-mino.

Original *ǣ*
in Latin.

In all the foregoing instances in Latin the short *ǣ* comes in the originally accented syllable; in the unaccented syllable it always appears as *e*, at the end of a word, in close syllables (i. e. before two consonants), and before *r*. Thus we have *ἐνθα* beside *inde* (Osthoff, *Z. G. d. P.*, p. 338).

So forms like *mollitiem* are parallel to Greek forms like ἀλήθειαν with short *a*. As *ǣ* remains in Latin in nom. sing. fem. and neut. plural, it must originally have been long, and

therefore in instances like *parricidā* the vocative cannot have taken the place of the nom., as an original *parricidā* would have become **parricidē*. *Parricidā* can only come from an original *parricidā*.

Other instances of *e* in Latin for original *a* are *párticeps* (*cap-io*), *réddere* (*dare*), *péd-e* (instrumental; cf. ἄμα, πῆδά).

In open syllables before labials and *l* it becomes *u* which changes to *i*, as *ín-sulio*, *in-silio* (*salio*), *occupo* (*cap-io*). Before *l* followed by a consonant it becomes *u*, which does not change to *i* (*insulto*).

In other open syllables and before *ng* it becomes *ɣ*, as *con-tingit* (*tango*), *ádigo* (*ago*), etc.

Long Indo-European *ā* appears in Greek as *ā*, but in Attic and Ionic mostly as *η*; in Latin as *ā*. Long Indo-European *ā*.

The Indo-European feminine suffixes *-ā-*, *-tā-*, etc. are represented in Greek *χωρά-*, Latin *deā-bus*, etc.

The nominal suffix *-tār-* (Attic *-τητ-*) appears in Doric, e. g. *νέο-τατ-ος*, Lat. *novi-tāt-is*. Other instances of *ā* original are

ἄδύς (for σῑῑᾱδύς)	suavis (for suād-vis), suadeo.
μάτηρ	mater.
φράτηρ	frater.
κλαῖς (for κλαῖς)	clavis, claudio.
μᾱλον	malum.
πλαγά	plaga.
φάμα	fama, fari.
ἱ-στα-μι (for σι-στᾱ-μι)	stator, stare, stamen.
χᾱμόν· καμπύλον Hesych.	hamus.
ναῦς (Ion. νηῦς, Sk. <i>nāús</i>)	navis.
ᾱέομαι (for σᾱγεομαι)	prae-sag-us.
ᾱλος (for <i>Fālos</i>)	val-lus.
ᾱλις (for <i>Fālis</i>)	val-lis.
ᾱχῶ (for <i>Fāχῶ</i>), cf. }	vag-i-o.
ἰᾱχή (for <i>Fῑῑᾱχή</i>) }	
κλαρος	glarea.
ῥάδιξ	radix.

σκήπων, Dor. σκάπανιον	scapus.
μῆχος, μάχανά	mag-nus, mājor (for māhior).
νᾶ-σος, νᾶ-ρός, νᾶ-μα	nare.
φᾶγός	fagus.
πάγ-νῦμι	pac-em.

$\bar{a}$ in Attic
and Ionic.

Attic and Ionic represented the long $\bar{a}$ of the above Greek instances by η , and employed the same letter to represent the Indo-European open $\bar{e}$, as for instance in $\theta\acute{\eta}$ -σω. This change from $\bar{a}$ to η in Ionic and Attic took place before $\tau\acute{\alpha}s$ and $\pi\acute{\alpha}\sigma\alpha$ had arisen out of $\tau\acute{\alpha}\nu s$ and $\pi\acute{\alpha}\nu s\alpha$, which would otherwise have become $\tau\eta s$, $\pi\eta s\alpha$. On the other hand, in the dialect of Elis $\bar{a}$ long in $\mu\acute{\alpha}$, $\epsilon\acute{\iota}\bar{a}$, $\pi\alpha\tau\acute{\alpha}\rho$ represents the original open $\bar{e}$ of $\mu\acute{\eta}$, $\epsilon\acute{\iota}\eta$, $\pi\alpha\tau\acute{\eta}\rho$.

In the feminines of the a -declension where $\bar{a}$ was original, Attic has only preserved the vowel after a preceding ι , υ , ρ , while Ionic does not go so far even as this. Homer for instance has $\epsilon\lambda\alpha\acute{\iota}\eta$ and $\acute{\alpha}\gamma\omicron\rho\acute{\eta}$. Even in Attic we have $\acute{\alpha}\kappa\omicron\rho\eta$, $\delta\acute{\epsilon}\rho\eta$.

Where Attic shows $o\acute{\alpha}$ an intervening ι has disappeared, as for instance in $\pi\acute{o}\bar{a}$, answering to Homeric $\pi\omicron\acute{\iota}\eta$. In $\chi\lambda\acute{o}\eta$ for $\chi\lambda\acute{o}\phi\eta$ and $\beta\omicron\acute{o}\eta$, on the other hand, we find η .

In some instances the original long $\bar{a}$ was shortened, as for instance in $\acute{\alpha}\lambda\acute{\eta}\theta\epsilon\iota\acute{\alpha}$, $\acute{\alpha}\nu\alpha\acute{\iota}\delta\epsilon\iota\acute{\alpha}$.

We should further note that in the contracted verbs in $-a\omega$ we have η for $\bar{a}$ in a few verbs, e. g. $\pi\epsilon\upsilon\omega\eta\tau\epsilon$, $\delta\iota\psi\acute{\eta}\nu$, $\zeta\acute{\eta}\nu$. In the case of $\chi\rho\acute{\eta}\sigma\theta\alpha\iota$, although Herodotus wrote $\chi\rho\acute{\alpha}\sigma\theta\alpha\iota$, yet the fact that the η remains in other dialects points to a belief that η was original. As a rule in Attic we have original $\bar{a}$ in the present, e. g. $\tau\iota\mu\acute{\alpha}\omega$, though not in other tenses, e. g. $\tau\iota\mu\acute{\eta}$ -σω, $\epsilon\tau\acute{\iota}\mu\eta$ -σα.

Indo-
European
 $\bar{e}$.

Indo-European short $\bar{e}$ appears in Greek as ϵ , in Latin as $\bar{e}$. It appears in the root syllables of neuters in $-\epsilon\sigma-$, as for instance, $\nu\acute{\epsilon}\phi$ -os, $\xi\rho\epsilon\beta$ -os, $g\epsilon n$ -us, etc. It also appears in present stems with middle degree of the full root (cf. p. 236), e. g. $\phi\acute{\epsilon}\rho$ -ω, $f\acute{e}r$ -o.

In Sanskrit, as has been said before, short *a*, *e*, *o* appear under the symbol ἄ alone.

ἔστι, Sanskrit <i>ásti</i>	est.
γένυς	gena.
τέ	que.
γένε(σ)ος	generis.
φέρω	fero.
δέκα	decem.
ἕζομαι (for σεδ-ιομαι)	sedeo.
ἔδρα	sellā (for sed-la).
ἀ-στέρα	stellā (for ster(u)la).
κεράς (for κεραφος)	cervus.
ἑπτά	septem.
ἕξ	sex.
μέλι(τ)	mel(t).

But cf. p. 305.

ἔδειν	edere.
ἕπομαι	sequor.
ἔρπω	serpo.
στέγ-ει (also τέγος)	teg-it.

στέγος, τέγος, Sk. *√sthag* may point to a double form of the root in the original language. We may perhaps compare the Homeric *τείρεα* (Σ. 485), meaning 'constellations,' with ἀ-στήρ.

ἔτος (for <i>Fetos</i>)	vet-us.
μέσος (for μεθ-ιος)	med-ius; cf. Sk. <i>mādhya</i> .
ἕνος	sen-ex, sen-ium.
δεξιός	dexter.
τέρμ-ων	terminus.
τείρω (for τερ-ιω)	tero.
τρέμ-ω	tremo.
πέτ-ομαι	pet-o.
πτερόν for πετ-ρόν	{ penna (for petsna, cf. pesna, Fest. 205. 209).
πέδ-η	im-ped-ire.
πέλλα	pellis.
νέποδες, ἀνέψ-ιος	nepos.

πλέκω	plexus.
λέγω	lego.
ὀ-ρέγω	rego.
λέων	leo.
ἔω (ῶ)	ero.
χθές	heri, hesternus.
φρέ-αρ	fervere.
κέρ-αμος	cremare.
ἄ-Fέντα	ventus.
πεν-θερός	of-fendix.
θείνειν	fendere.
Φερέω	ver-bum.
ἀπό-Φερσε	ver-rere.
νέκυσ	nex.
μείρομαι (for μερῖομαι)	mereo.
μέν-ος	mens.
πεζός (for πεδ-χος)	ped-ester.
Fέριον	vel-lus.
Φεσθής	ves-tis.
σειρά (for σερ-χα)	sera.
Fέσπερος	vesper.
ἐFέργειν	vergo.
νεφέλη	nebula.
-τερο- of comparatives	i-teru-m.

The *ε* was pronounced open like *ā* in the dialect of Elis, as we see from the representation of the sound on inscriptions, e. g. *εὔσαβέοι* for *εὔσεβοῖ*.

ž in Latin. *ž* remains unchanged in Latin before *r*, at the end of a word, and before double consonants. But in an originally unaccented syllable before a single consonant it passes to *i* (*cólligo*—*lego*, *ágimīni*—*ἀγόμενοι*), and also before *-gu-* and before nasals followed by gutturals (see p. 73).

Indo-
European
ž.

Indo-European *ē* appears in Greek as *η*, in Latin as *e*, in
ἡμι- semi-

νη-μα	nemen.
ἀμφ-ήρης	re-mus.
ἱ-η-μι, ῖ-η-μα	semen.
μην-ός (Aeolic μῆννος for μην-σος)	} men-sis.
τι-θή-νη, θῆ-λυς	
εἴης (for ἐσ-κής)	fe-mina, fe-lare.
πλή-ρης, πῖμ-πλη-μι	sies (old Latin for sis).
ἐδ-ηδ-ός	ple-nus.
	ēd-imus.

In Latin *ē* appears to become *ī* in *fīlius* (cf. *fē-mina*), *sub-ē* in Latin. *līlis* (cf. *tēla*), *delīnio* (*lēnis*), *suspīcio* (*spec-*), *convīcium* (*Fēp-os*, Indo-European $\sqrt{\mu\check{e}q}$). But the first two may be instances of the 'balancing power of *l*' (p. 71), and in every case there is an *i* in the following syllable. *Delīnio* and its derivatives often appear in MSS. as *delenio*, etc. If the *i* is correct, the word is perhaps best connected with *līnum*.

Indo-European *Ǿ* appears in Greek as *o*; in Latin as *ǝ*; in Indo-European the northern languages it has been confounded with *a* and *ǝ*.^{European} the indeterminate *a*.

Short *o* is to be found in the stem of the perfect, as in

δέ-δορκ-ε	mo-mord-it.
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It appears in the root syllable of the *O*-declension,

λευκο-φόρ-ος, ὄχ-ος, τόν-ος, προ-ς (prec-or).

and also as the thematic vowel of the present tense,

Sk. <i>bhāra-nti</i>	<i>φέρο-ντι</i>	cf. <i>vīvo-nt</i> .
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Other instances are

ὄζειν (for ὀδ-μῆ), ὀδ-μή	odor, ol-ere.
ὄρνυμι	orior.
ὄλλυμι	ab-ol-ere.
ὀκτώ	octo.
ὀμός	domus.
κόραξ	corvus.
βορά	vorare.
κολωνός	collis.
στόνος	tonare.
πόσις, πότ-νια	potis.

ὄψ-ομαι, ὄμ-μα	oc-ulus.
ὀστέον	os.
κόκκυξ	coxa.
στόρ-νυμι	stor-ea, torus.
ρόδον	rosa.
μόλις	molestus.
κορωνίς	corona.
ὄλος (ὄλφος, cf. Epic οὔλος)	sollus.
ὀρφάνος	orbus.
ὀφελος	opulentus.
πρό	prō.

Lengthened as a monosyllable, cf. Eng. *for-ward*.

μόννος	monile.
βροτός (cf. μορτός, Callim. <i>Frag.</i> 271)	} mor-ior.
ὄνοτος	
βόθρος	fodio, fossa.
ὀπ-άων (cf. ἀ-οσσητήρ for ἀ-οκ-κητήρ)	} soc-ius, cf. sequ-or.

δ in Latin. Unaccented δ in Latin regularly becomes $\tilde{u}$ (e.g. *fili-us*), except after *u* and η . At the end of a word it becomes $-ē$, e.g. *sequerē* = $\tilde{\epsilon}\pi\epsilon(\sigma)$. In accented syllables before two consonants, especially if the first be a nasal, it often becomes *u* (*uncus*—ὄγκος, *umbilicus*—ὀμφαλός).

Indo-European
 δ .

Indo-European long $\bar{o}$ appears in Greek as ω ; in Latin as $\bar{o}$:

δῶρον	donum.
νῶϊ	nos.
γι-γνώ-σκω	(g)nosco.
γνω-τός	no-tus.
ὠκ-ύς	oc-ior.
κρώζω	crocio.
κλώζω	glocio.
ὠόν	ovum.
κῶνος	cos.
πῶ-μα (cf. Aeolic πώνω)	po-culum, po-tus.
ρῶ-ννυμι	ro-bur.

$\mu\bar{\omega}\rho\text{-os}$

mor-osus.

 $\xi\text{-}\rho\omega\text{-}\acute{\eta}$

ros.

Cf. A. 303 $\alpha\lambda\mu\alpha$ $\xi\rho\acute{\omega}\sigma\epsilon\iota$ $\pi\epsilon\rho\acute{\iota}$ $\delta\omicron\upsilon\rho\acute{\iota}$ for $\xi\rho\acute{\omega}\epsilon\omega$ in sense of 'gush' or 'flow.'

 $\beta\bar{\omega}s$, Doric

(bos).

 $\pi\lambda\omega\text{-}\tau\acute{o}\text{-}s$ (τ . 122 $\delta\acute{\alpha}\kappa\rho\upsilon$ $\pi\lambda\acute{\omega}\epsilon\iota\nu$)

} plorare.

Long $\bar{o}$ appears in the ablat. sing. of O -stems :

$\bar{\omega}\delta\epsilon$, $\pi\bar{\omega}$ ($\pi\omicron\upsilon$, $\Delta\omega\rho\iota\epsilon\acute{\iota}s$ Hesych.), $\bar{\omega}$ Locr. (=unde), Lat.

$Gnai\upsilon\text{-}\bar{o}\delta$; in the 1st sing. of the thematic present,

 $\phi\acute{\epsilon}\rho\text{-}\omega$ fer- $\bar{o}$;

and in the terminations

 $\text{-}\tau\omega\rho$

-tor.

 $\mu\epsilon\mu\acute{\alpha}\text{-}\tau\omega$

memen-to.

A long ω was in Greek developed dialectically out of short ^{Dialectic} $\bar{o}$ from different reasons. Thus $\tau\acute{\omicron}\nu s$, the accus. pl. masc. ^ω, which we find in the Cretan dialect, becomes in Doric $\tau\acute{\omega}s$, but in Attic and Ionic $\tau\omicron\upsilon s$. An original $\kappa\omicron\rho\phi\omicron s$ passed after the disappearance of the f into Doric $\kappa\bar{\omega}\rho\omicron s$, Epic $\kappa\omicron\upsilon\bar{\rho}\omicron s$, but Attic $\kappa\acute{\omicron}\rho\omicron s$. These phenomena will be dealt with at length under vowel-combinations (p. 185).

$\bar{o}$ sometimes appears in Latin as $\bar{u}$; cf. $da\text{-}\bar{t}\bar{u}r\text{-}us$ beside $\bar{o}$ in Latir. $dat\bar{o}r$, $f\bar{u}r$ beside $\phi\acute{\omega}\rho$, huc for $h\bar{o}d\text{-}ce$. This change is unexplained.

A vowel is sometimes developed, both in Greek and Latin, ^{The Indeterminate Vowel¹.} between two consonants. But this vowel differs from the vowels proper a , e , $\bar{o}$ in the fact that it has no definite character of its own; and that while we may say that under ordinary circumstances it is represented by $\bar{a}$, yet it is largely influenced by the nature of the neighbouring vowels, or by the analogy of kindred forms of the same root. For instance, according to analogy, the weakest form of the root $d\bar{o}$ should be $d\text{-}\bar{t}\acute{o}s$ (see p. 236). But such a sound is unpronounceable. The Sanskrit under these conditions sometimes assimilates the two consonants, and we get $d\bar{e}v\acute{a}\text{-}t\text{-}ta$ for $d\bar{e}v\acute{a}\text{-}d\text{-}ta$. In Greek assimilation is not carried to such great lengths;

¹ Compare throughout the following pages Havet in *Mém. Soc. Ling.* vi. 17 sqq.

δ-ρός could only become τ-ρός and ρός, which offers no apparent connexion with the form δλ-δω-μι. Accordingly the Greeks inserted a vowel between the two consonants, which in this instance, on the analogy of ω and ο of the other forms of the root, takes the form ο, and we get δορός. But in Latin the more ordinary representation of the indeterminate vowel by *a* is seen in *dā-tus*. The same indeterminate vowel appears in Sk., where it is called a *svarabhakti* vowel, and appears as *ī*. In the notation of the I.-E. alphabet we write it *ə*, and speak of it as the I.-E. *schwa*.

As instances of the indeterminate vowel in the weakest degree of roots we may give—

I.-E. <i>sth-ə-tós</i>	✓ <i>stha</i>	Sk. <i>sth-i-tás</i>	στ-ᾱ-ρός	st-ā-tus.
<i>d-ə-tós</i>	✓ <i>do</i>	<i>á-d-i-ta</i>	δ-ο-ρός	dā-tus.
	✓ <i>sē</i>		ῥ-τός	sā-tus.
<i>pə-tér</i>		<i>pi-tár</i>	πᾱ-τήρ	pā-ter.
<i>gl, gəl</i>			γ-ά-λωος	glō-s.
<i>ghl, ghəl</i>			χ-ά-λαζα	gra-n-d-o.

The same vowel appears inserted between the root and the termination in cases where it is difficult to say whether it is to be regarded as part of the root or not (see p. 115).

Thus Sk. <i>duh-i-tár</i>	θυγ-ά-τηρ.	
<i>dam-i-tá</i>	ἁ-δάμ-α-τος	dom-i-tus.
<i>vam-i-tá</i>	ἐμ-ε-τός	vom-i-tus.
<i>jan-i-tár</i>	γεν-ε-τήρ	gen-i-tor.
	παλ-ά-μη	pal-ma.
	ὠλ-έ-νη	ul-na.
	κολ-ο-κάπος	cracentes.

Old Latin for *gracilis*, cf. *Gracchus*.

ἄν-ε-μος	an-i-mus.
τελ-α-μών	ter-mo.
φέρ-ε-τρον.	}
φέρ-τρον.	

φέρ-τρον is to be considered the older form rather than a contraction for φέρετρον.

The above instances show that the precise sound which

represents the indeterminate vowel in Greek is almost a matter of accident, or at any rate that the laws that determine it are not very well defined.

In Latin it may be said roughly that the indeterminate In Latin vowel becomes *u* before *l* and *m*, *e* before *r*, *i* before *n*.

Thus compare

vit-u-lus, for vit-lus, with *ἰτ-α-λός*.

pat-u-lus with *πέτ-α-λος*.

saec-u-lum, vinc-u-lum with saeculum, vinclum, which are to be considered as the older forms.

pop-u-lus with Old Latin poploe, cf. publicus, Poplicola.

Herc-u-les with me-hercle.

um-e-rus with *ῥμος* (for *ῥμ-σος*?), cf. num-e-rus.

inf-e-rus with infr-a.

ag-er for agr, agr, with *ἀγρ-ός*, agr-estis.

vol-u-p with *ῥέλπ-ομαι*.

h-u-m-i with *χαμαί* for *χημαί*; the strong root comes in homo for hem-o (cf. *sēmo* = *se-hemo).

s-u-mus with Sk. *s-más*.

vol-u-mus with vol-t.

col-u-mn-a, col-u-men with culmen.

We may add the Plautine *discip-u-linae*, *nomenc-u-lator*, and *singuli*, Indo-European *smk-ló*.

In borrowed words we get *drach-u-ma*, *Tec-u-messa*, *Aesc-u-lapius* (*Ἀσκληπιός*), *m-i-na*, *daph-i-ne*. So *ac-i-nus* : *ἄχυν-η*, *as-i-nus* : *ἄσνος* for *ῥσνος* (? Semitic word).

We may also compare the termination *-i-nus* in *dom-i-nus* Gk. *-avo-* for original *-ῥuo-*. So in *nom-i-nis* the old form would be *nom-nós*, but here the analogy of the nominative is operative (*nom-en* for **nom-ῥ*).

As a special feature under this head we may notice what has been called the 'balancing power of *l*,' i.e. the tendency of this letter when standing between two short vowels to assimilate the vowels on either side. In *calamitas* the first *a*, whatever we connect the word with, is original; but when the second *a* changes to *u* in composition, the first is assimilated to it and we get *incolumis*, not *incalumis*. Medial *ē* unaccented

σφόγγος : fungus (borrowed). gungrum : γογγρός (?).

δόν-α-ξ : junc-us. { lungus (for longus) is vouched
for by Ital. *lungo*, Fr. *loin*.

hunc : hunc.

Oncare is borrowed from ὀγκάομαι, but we also find *uncare*. *Tongitio*, *tongere* show the rare -ong-, but the former is of the Praenestine dialect; the latter only occurs Fest. 356.

The same change of *o* to *u* seems to occur in the neighbourhood of gutturals, cf. *luxus*: λούξος (but *nox*: νύξ), and labials (ἄμμος: *umerus*, ὀμφαλός: *umbo*, νόμος: *numerus*) but with liquids, (φύλλον: *folium*, θύρα: *fores*, μύλη: *mola*). With long vowels we have *fūr*: φύρ, *ulna*: ὠλένη, *hūc*, *illūc* for *hōc*, *illōc*; cf. *quō*. Add *fore*: φύω, *storax*: στύραξ, (but *ululare*: ὀλολύειν) and the borrowed words *amurca* (ἀμόργη), *funda* (σφενδόνη) by popular etymology from *fundo*.

3. As in Latin *ǝ* becomes *ǣ* before *gm*, *gn*, or a nasal followed by a guttural, so *ě* becomes *ǣ* in—

lig-num¹ : lego.

tig-num : tego.

sig-num : in-sec-e.

dig-nus : dec-et.

pinguis (for pŋguis) : παχύς.

quinque for penque : πέντε.

ignis, Sk. *agni*; Indo-European *ḡgnis*.

beni-gnus, mali-gnus : bene, male.

septingenti for *septŋ-kŋt-i* (for *g*, cf. p. 112).

lingua, dingua for *dŋgŋa*, Germ. *Zunge*.

In *abi-e-gnus* the *e* is due to the preceding vowel being *i*, cf. *abi-et-is* but *mil-it-is*.

There are very few cases of -egn-, -egm- in Latin, and in most of them the vowel is long: *sēgnis*, *rēgnum*, *tēgmen*, *oblēgmina* (cf. *tēctus*) have the apex over the *e* in inscriptions; and perhaps *segmen* may also have the first vowel long.

The Greek vowels are in the main regular in their representation of the sounds of the original speech, but ^{The Greek simple vowels.}

¹ Priscian's statement (ii. 63) that every vowel followed by *gn* is long is not borne out by the evidence of the Romance languages.

in the different dialects we occasionally find a difference of treatment. In some instances, such as ἱππος, Lat. *equus*, we find an irregularity common to all Greek dialects (cf. p. 75).

α and ε.

We find that vowel-sounds in the immediate neighbourhood of a liquid or nasal vary in their representation in different dialects, just as the vowel-sound of a nasal or liquid sonant was indeterminate in its character, and therefore at times varying in its representation.

Thus in place of ε we find α in—

τράπουσι (Hdt. i. 63) beside Attic τρέπω.

Megarian τράφεν (Ar. *Ach.* 788) beside Attic τρέφειν.

Similar instances are τράχω and σγράφω for Attic τρέχω, στρέφω. These we may compare with the common Greek γράφα.

Locrian φάρειν	Att. φέρειν.	
Elean φάργον	Att. ξργον.	
Att. βάραθρον	Ep. βέρεθρον	Arcad. ζέρεθρον.
Dor. ἄρταμις	Att. ἄρτεμις.	
Att. βάλλω	Arcad. ζέλλω, ἐσδέλλουτες.	
Att. ἄρσην	Ion. ἔρσην.	

J. Schmidt (*K. Z.* 25. 23) regards this variation as a proof that the original inflexion ran ἔρσην, gen. ἄρσενός.

Other instances sometimes without a neighbouring nasal or liquid are—

Boeotian γά beside Attic γέ.—Dorian κά, Ep. κέν.—Dor. πόκα, ἄλλοκα, Lesb. ἄλλοτα beside Att. πότε, ἄλλοτε.

εἶτα, ἔπειτα, ἔνεκα beside εἶτεν, ἔπειτεν, ἔνεκε on Attic inscriptions (Meyer, *Gk. Gr.* § 24).

ε and ο.

We find an interchange of ε and ο in—

Lesbian ἔδοντες beside Att. ὀδόντες.

ἔδοντες was probably connected with ἔδομαι by popular etymology. The ο of ὀδόντες is probably prothetic.

Att. ὀβολός Boeot. ὀβελός Cret. ὀδελός.

The original ε has in Attic been assimilated to the other vowels.

Att. 'Απόλλων Doric 'Απέλλων.

The etymology of the word is obscure. Professor Sayce (*Intr. to Science of Language*, i. 319) explains 'Απόλλων as for 'Α-κφολλων (? Ακ^ω ολλων) and connects it with πέλομαι, Sk. *√car*, making it mean 'the son of the revolving one.'

o and a interchange in—

o and a.

Cretan ἄναρ, Hesych.

Attic ὄναρ.

ἀγκόλαι, Hesych.

Attic ἀγκάλαι.

ἄρρωδέω, Hdt.

Attic ὄρρωδέω.

We may compare the representation of a liquid sonant in Aeolic by o, e, g.

στροταγέω, Νικόστροτος : Att. στρατός.

βροχέως, Sapph. 2. 7.

Att. βραχύς.

κόρζα· καρδία, Πάφιοι is a gloss of Hesychius.

ι and ε interchange in—

Arcad. and Cyprian ιν

Att. ἐν.

Epic ἰγνύη (N. 212) is perhaps a compound of ἐν-.

Ion. ἰστλή

Att. ἐστία.

ι appears in place of ε in Greek—

ἵππος : cf. *equus*; Sk. *asvas*.

πίτνημι beside πετάννυμι.

σκιδνημι beside σκεδάννυμι.

λικριφίς beside λέχριος.

In ἵππος, Lat. *equus*, the alteration of the ε may be due to the influence of the following guttural which is labialised. πίτνημι and σκιδνημι perhaps follow the analogy of κίρνημι, πίλναμμαι (beside κεράννυμι and πελάζω), where ιρ, ιλ represent a liquid sonant. In λικριφίς the change of ε to ι may be explained as an assimilation to the character of the succeeding vowels. For ι in the neighbourhood of a guttural consonant we may compare ι-χθύς, ι-πτις, where the ι is probably prothetic. A coefficient ι is also to be found in ι-σθι the imperative of εἶμι (Osthoff, *K. Z.* 23. 579).

In many of the non-Ionic dialects ε passes into ι before the vowels o and a, and in the Boeotian dialect sometimes before ει—

Att. θεός

Boeot. θιός

Lacon. σιός.

Att. ἐγώ

Boeot. ἰών.

So in the contracted verbs in εω- Aristoph. *Iysist.* gives the Laconian forms ἐπαινίω, μογίλομες, ὑμνίωμες : and in the future of liquid and nasal stems we have ἐμμενίω.

Aeolic *v*. The grammarians regarded a change to *v* as especially a mark of the Aeolic dialect. Thus Epic *ἄμυδις* (cf. *ἄμα*), *ἄλλυδις* (*ἄλλο-*), *ἐπασσύτεροι*, *πύματος*, *αἰσυνήτης* (*αἶσα-*) were accounted as Aeolisms.

Other instances of the appearance of *v* in close connexion with a liquid are *διαπρύσιος*, *πρύτανις*, *πρύμνα*, *πρυλέες* (*πρό*), *ὑπόβρυχα* (*βροχ-*).

CHAPTER V.

DIPHTHONGS AND SEMIVOWELS.

SPEECH sounds can be considered either separately, i.e. ^{Glides and} ~~apart~~ from the combinations in which they occur in actual ^{transi-} ~~speech~~, or they can be considered as they appear actually ^{tional} ~~sounds~~. combined in words and syllables. In passing from one spoken sound to another there are glides or transitional sounds for which there are no fixed alphabetic symbols. The acoustic effect depends upon the force and rapidity of pronunciation. If the breath passes before vocalization, there ensues a gradual beginning; if the breath is held back till the moment of vocalization there is a clear beginning as in singing. If stress is laid upon the initial glide in the gradual beginning we have the rough breathing *h*. Similarly the vowel endings can be clear, gradual, or stressed as in the case of the Sanskrit *visarga*. Where vowels succeed one another in different syllables, the second is introduced by a fresh effort of expiration, which can be either the smooth or rough breathing. The frequent instances of the contraction of neighbouring vowels in Greek and Latin show that the intervening glide was soft and scarcely perceptible, and this is incompatible with a check of the voice or a rough breathing. Apart from the succession of vowel-sounds upon one another, there are monosyllabic combinations of vowels, both those which are known as diphthongs, and those in which a semivowel is followed by other vowels.

By a diphthong we understand a combination of two ^{Diph-} ~~simple~~ vowels, the first of which carries the stronger accent, ^{thongs}. pronounced in a single effort of the breath. Alphabetic symbols sometimes stand in the way of the recognition of the true diphthongal sound. In the English '*æ*' the sound is really

diphthongal and may be represented by *-iy-*, while the sound of 'who' is represented by *uw* (cf. Sweet, *Handbook of Phonetics*, § 209).

Proper
and im-
proper
diph-
thongs.

Diphthongs have been usually divided into proper and improper. To the first group belong such combinations as *ai, ei, au, ou*, that is, the diphthongs whose second component involves a closer narrowing of the mouth than the first; while in the second group the conditions are exactly reversed, and the *i* and *u* come first. Historically speaking the diphthongs of the Indo-European languages had *i* and *u* in the second place, while the so-called improper diphthongs first developed at a later date out of monosyllabic *e* and *o*. Besides this there is a physiological justification for the distinction in the fact that the *i* and *u* have less fullness of sound, and so fall naturally into the subordinate place.

Quantity
in diph-
thongs.

There is no limit to the variation of quantity in the components of a diphthong. For instance the first component is short in the *ai* of 'high' and *au* of 'now,' long in 'he' and 'who.' So too we may compare the old Greek *α, η, φ, āv, ηv, ωv* with *αι, ει, οι, αυ, ευ*, and in Sanskrit the *guṇa* (*e, o*), and *vrddhi* (*āi, āu*) diphthongs. We may say then that a diphthong is composed of a sonant or syllable-forming letter followed by a semivowel. A complete list of diphthongs gives us

āi āi, ēi ēi, ōi ōi.

āu āu, ēu ēu, ōu ōu.

These have been more faithfully preserved in Greek than in the related languages. In Sanskrit we have *e, o, āi, āu*. Of these *e* and *o* are regarded as the corresponding *guṇa*-vowels to *i* and *u*, that is, strengthenings of *i* and *u*, while *āi, āu* are instances of a still higher increment of *i* and *u* and represent the corresponding *vrddhi*-vowels.

The Greek *upsilon* was a modified sound, as we can see from the transcription of the full Latin *u*, e.g. *Lūcius* becomes in Greek not *Λυκιος* but *Λούκιος*. The Boeotians still further modified *υ* to *ι*. But in the diphthongs *υ* possessed a fuller sound, and the Roman transliteration of *Μοῦσα* was *Musa*.

Indo-European ǎi = Greek $\alpha\iota$, Latin ai , ae .

$\alpha\dot{\iota}\theta\omega$	aedes, aestas, aestus.
$\alpha\dot{\iota}\phi\acute{\omega}\nu$	aevum.
$\alpha\dot{\iota}\sigma\alpha$	aequus.
$\lambda\alpha\dot{\iota}\acute{\omicron}\varsigma$	laevus.
$\sigma\kappa\alpha\dot{\iota}\acute{\omicron}\varsigma$	{ scaevus, ob-scae(v)nus, Scaev-ola.
$\nu\alpha\dot{\iota}$	nae, nē.
$\pi\alpha\dot{\rho}\alpha\dot{\iota}$	prae.

Indo-European
 aj .

In originally unaccented syllables ai becomes in Latin $\bar{i}$, as Latin ai in *in-qui-ro* beside *quaero*, *ex-ist-umo* beside *destumo*, *mēnsis* for *mēnsais*. So *si* as a proclitic is unaccented, like the Greek $\alpha\dot{\iota}$, and stands for an original ǎai . Compare Oscan *suaí*, *suae*, Umbrian *sve*, Greek $\alpha\dot{\iota}$, $\alpha\dot{\iota}\theta\epsilon$.

Indo-European au = Greek $\alpha\upsilon$, Latin au .

$\tau\alpha\dot{\upsilon}\rho\omicron\varsigma$	{ taurus (if not a borrowed word).
$\pi\alpha\dot{\upsilon}\rho\omicron\varsigma$, $\pi\alpha\dot{\upsilon}\omega$	paucus, pauper, paullum.
$\sigma\alpha\upsilon\chi\mu\acute{\omicron}\nu'$ $\acute{\alpha}\sigma\theta\epsilon\nu\acute{\epsilon}\varsigma$ Hesych.	{ saucius.
$\kappa\alpha\upsilon\lambda\acute{\omicron}\varsigma$	caulis.
$\gamma\alpha\dot{\upsilon}\rho\omicron\varsigma$	gaudere.

Indo-European
 au .

Here we are really dealing with $\acute{au}$; cf. *gāvisus*: but the $\acute{a}$ is shortened before the semivowel followed by a consonant.

$\theta\rho\alpha\dot{\upsilon}\omega$	fraus.
$\sigma\tau\alpha\upsilon\rho\acute{\omicron}\varsigma$	instaurare.
$\alpha\dot{\upsilon}$, $\alpha\dot{\upsilon}\tau\iota\varsigma$	autem.
$\acute{\alpha}\pi\omicron$ - $\lambda\alpha\dot{\upsilon}\omega$	Laverna.

In originally unaccented syllables in Latin au becomes $\bar{u}$; *fraudor* but *dēfrūdo*, *claudo* but *cónclusus*, etc.

Indo-European ei = Greek $\epsilon\iota$, Latin ei , which in early times becomes monophthongous and is written $\bar{i}$.

Indo-European
 ej .

$\delta\epsilon\dot{\iota}\kappa\nu\mu\iota$	deico, dico.
$\kappa\epsilon\dot{\iota}\mu\alpha\iota$	ceivis, cívīs.

εἶμι	adeitur, adītur.
πείθειν	fīdo.

In inscriptions we find *ei* used to represent a long (close) *ē*, as in *leigibus*, *pleibes*, or a long (open) *i*, as in *veivos*, *faxseis*. But these are rather graphic representations of a particular pronunciation of the simple long vowel than true diphthongs.

Indo-European
eu.

Indo-European *eu* = Greek *ευ*, Latin *ou*, which becomes *ū*, and sometimes *ō* (p. 87).

A true Latin diphthong *eu* is only found in the *Leucesie* of the *Carmen Saliare*.

λευκός, Old Latin loumen, Loucina. Classical lūmen, Lūcina.

εὔω	ūro, ūr-na.
εὔδω	sūdum.
ζεύγος	jūgera.
ἐρεύθ-ω	rūfus, rōbigō.

But these words may come from the Italian dialects, as a medial *θ* should be represented in Latin by *d* (p. 148).

πλεύ-σομαι plōrare.

So Πολυδεύκης is transliterated Polouces, Polluces, Pollux.

Indo-European
oi.

Indo-European *oi* = Greek *οι*, Latin *oi*, *oe*, which in classical times becomes *ū*, e. g.

οἶνη oinvorsei, oenus, ūnus.

But in final (unaccented) syllables *oi* becomes in Latin *ī*, e. g.

τοῖ is-tī.
ἵπποις équīs from equōis, equōis.

The *i* of *qui* comes from its accentuation as an enclitic, *sī qui*, *āliqui*; *hī* may be on the analogy of *īsti*, etc.

Other
diph-
thongs.

So far we have dealt with instances of diphthongs which we may assume to have existed in the original language, but to these must be added the diphthongs which arose from changes of sound within the limits of the separate languages. In Greek for instance diphthongs arose from the coming together of two vowels after the disappearance of an intervening

spirant or semivowel, and appear as the result of contraction and epenthesis. The graphic representation of the Greek diphthongs so produced was the same as that of the original diphthongs, but the sound was not in all cases the same. Thus the sound of the original Greek diphthongs *ει* and *ου* was, as we shall see, not the same as that of the *ει* and *ου* which resulted from contraction, epenthesis, or compensatory lengthening (cf. p. 179).

From γαχ-ιω we get γαίω.

καχ-ιω καίω.

παχ-ιω παίω.

κλεF-ι- κλει-τός.

γενεσος γένους.

ίπποσχο ίπποιο, ίπποο, ίππου.

τρεχ-εs τρείς.

In all these instances an intervening spirant or semivowel has disappeared, leaving a diphthong, either with or without contraction of the vowel-sounds so brought together.

With the phenomena of Hiatus, Elision, and Contraction as a whole we shall deal when we treat of Sound Combinations.

Diphthongs are also the result of *ι* and perhaps *υ* Epenthesis. Thus where a syllable ending in *λ*, *ρ*, or *ν* is followed by an *ι* sound, this *ι* vanishes after palatalising the preceding syllable which itself develops an *ι*¹ (cf. p. 197).

μελανχια μέλαινα.

κερχω κείρω, etc.

In the Lesbian dialect a diphthong with *ι* is developed before *ς* in cases where a nasal has disappeared. Other dialects show a compensatory lengthening of the vowel :

τους Attic τούς Lesbian τοίς.

ἀκουσᾶντς Attic ἀκούσᾱς Lesbian ἀκούσαις.

To pass on now from the question of the origin of diphthongs to the history of their pronunciation in Greek, a com-

Pronunciation of diphthongs.

¹ This infection of a preceding syllable by a following vowel is common in Anglo-Saxon (cf. p. 21), and especially in Old Irish where the original termination has to be inferred from the effect it has had on the preceding syllable, e. g. Latin *equi*, in Old Irish *eich*.

parison of the different dialects at different stages gives the following results.

αι. *αι* in Greek answers to *ae* in Latin, and was the Greek transcription of the Latin sound.

In Boeotian inscriptions of the fifth century *αι* is represented by *αε*, as can be seen in such instances as *Αεσχωρώνδας*, *Λυσανίας*. *Αεθρη* for *Αιθρη* appears upon a vase of unknown origin, but the alteration of *αι* is probably due to Roman influence. After the reception of the Ionian alphabet the Boeotians wrote *η* for the diphthong *αι*. Thus for *ἰππόται*, *ἰππότη*: for *Θηβαῖος*, *Θειβῆος*. At a still later date the Boeotians employed *ει* to represent this sound, as in *Ἀθανεῖος*, where the *ει* was pronounced as close *ē*.

The same change in all probability went on in other dialects, and is indicated by the criticism of Socrates in *Ar. Nub.* 872:

ἰδού κρέμαι', ὥς ἡλίθιον ἐφθέγγατο
καὶ τοῖσι χεῖλεσιν διερρηγκόσιν.

We have an interchange of *αι* and *ει* in the conditional particle in Homer, where *εἰ*, *εἴθε*, stand side by side with *αἰ*, *αἴθε*, but in this case the Oscan *εταί* seems to point to *αἰ* being distinct in origin. For Attic *κτείνω*, *φθείρω*, Doric has *κταίνω*, *φθαίρω*, at least according to the grammarians (Ahrens 2. 186). The meaning of this interchange we cannot determine.

ει. The Diphthong *ει* seems in its pronunciation to have approximated to close *e* as in German *See*. In Ionic and Attic it was still a diphthong at the beginning of the fifth century, but afterwards passed to the *ē*-sound, and in the third century B.C. to *ī*, as it is pronounced now in Modern Greek. The change is seen earliest in the Boeotian dialect. Thus for original *ει* we have *ī* in *αἰδῶ*, *Δῖνλας*, *γῖτων*.

In our editions of the Greek authors many words appear in this later form, as for instance *τίω* for *τεῖω* and *ἱμάτιον* for *εἱμάτιον*. The Doric *εἴκω* is older than Attic *ἴκω*, *νείφειν* than *νίφειν*. We can here notice too that the quantity of *ι* of the Homeric dative points to an originally fuller termina-

tion either in *-ει* or *-αι*, as for instance in *Αἶαντι, μήτι, Διι-πετής*. There is also a variation in the quality and quantity of the ending of the modal adverbs, e.g. *ἡρεμεί, ἀναιμωτί, μεγαλωστί*, and of the penultimate syllable in *ὠφέλεια, ὠφελία, Ἑρμείας, Ἑρμέας*, etc. Attic has *χέλιοι* for the *χέλιοι* of Ionic inscriptions. The Latin transcription wavered: we have *Aeneas, Galatea, Sigeum*, but *Nilus and Chiron*.

An unexplained representation of the diphthong by *ε* is to be found in the Herodotean *ἀπόδεξις, ἔδεξα*, etc. as well as in the word *πρέσβυς*, Lat. *pris-cus*, for which in the Cretan dialect we have *πρεισγεντᾶν* as well as *πρεϊγίστοι, πρεϊγονα*, etc.

The sound of *οι* can be represented by the sound of English *oi*. *boy*. Its distinction from *ι* can be illustrated by the difference of *λοιμός, λιμός* as quoted in the oracle (Thuc. ii. 54). In old Boeotian inscriptions we find *οι* represented by *οε* as in *Διωνύσοε, Κοέρανος*. After the end of the third century the Boeotians rendered *οι* by *υ*, although they always styled themselves *Βοιωτοί*. The process of change seems to have been from *οι* to *υι*, as in the Lesbian locatives *τυῖδε, πῆλυι*, which come in Sappho, after which it passed to *υῖ*. The progress of itacism has led to modern Greek *ι*.

The long diphthongs *αι̃, ει̃, ο̃ι*, were not in all probability frequent in Indo-European. In the Greek *αι̃, ηι̃, ωι̃*, the first component is long and in the later MSS. *ι* was written underneath, as in *α, η, ω*. The long diphthongs are original in the datives *ἱππωι, μούσαι̃*: elsewhere they have arisen through the lengthening of short vowels, e.g. *αἰσθάνομαι, ἡσθόμην, λέγεις*, and subj. *λέγῃς*. In the first century B.C. the second component was no longer sounded in the Attic, and, as was already the practice in other dialects, was no longer written. False analogy has led to the subscription of iota in such instances as *οὔτω, ὁπί(σ)ω, ποτέρω*. These original ablatives or instrumentals were understood to be datives and so the iota subscript was added in the manuscripts.

The union of the long hard vowels *α, η, ω* with the semi-vowels *υ* in a diphthong can be seen in *ναῦς*, Epic *νηῦς*, Latin *nāvis*, where the *α* was originally long. Attic has shortened the long *α* of this diphthong in *θαῦμα, ἔκασα*.

Similar shortening has taken place in the words Ζεύς, Sk. *dyāús*, and βούς, Sk. *gāús*, Doric βῶς.

In the augmented tenses of verbs beginning with εὔ we have ηὔ-, as in *ἡὔρον*, *ἡὔδα*.

The sound ων which comes in *ὠντός* (E. 396), and the *ὠντός*, *σεωντοῦ*, etc. of Herodotus is the result of Crasis and is not original. Its appearance in the forms *θῶμα*, *θωνμάζω*, is peculiar to Herodotus.

Short diphthongs
av, ev.

In the short diphthongs av, ev, we probably have the u-sound full and not narrowed and modified as in *ῦ ψιλόν*.

In Ionic inscriptions εο replaces ev, but εο as one sound by synizesis is a close neighbour of the diphthong ev.

On the other hand ev replaces εο in such instances as *ποιεῦνται*, *κατοικεῦντων* in Ionic. The difference between the two becomes almost a mere question of orthography. Similarly we also find on Ionic inscriptions av represented by ao.

av, ev have had a common development. The second component vowel has become consonantal till finally in Modern Greek the two diphthongs are sounded av- and ev- before sonants, af- and ef- before surd sounds.

In such words as *καίω* for *καγ-ιω*, and *παίω* for *παγ-ιω*, the v after becoming consonantal disappeared. In Alexandria the v was regarded as a spirant; so *Δαβίδ*, e.g. for *Δανίδ*, would seem to show.

ov.

The diphthong ov passed in the fourth century to the sound of ū. Older than this change is the alteration of ov to ō.

✓πλv

*πλoυw passes to πλώω.

✓σρv

ῥέω but ῥώομαι.

✓χv

χέω but χώομαι.

vi.

The combination v stands apart from the diphthongs proper, as its components are both soft vowels or semivowels. In Homer it appears with diaeresis in *σνί*, *δρνί*, but as a single sound in *νέκvi*, *πληθνί*, etc.

The same sound occurs in *μνίa* and the fem. sing. of the part. perf. act. Before a consonant the combination was not allowed, as can be seen from the Homeric optatives, *ἐκδύμεν*

(Π. 99) and *δαιῦτρο* (Ω. 665); sometimes it was even disallowed before a vowel, as in *ἀναδῶν* (ι. 377).

The Latin language, as we find it in classical times, is almost entirely devoid of diphthongs proper. The only one which survives is *au*, and even here we find a strong tendency to substitute a simple sound for the diphthong. In the time of Cicero for instance some branches of the Claudian gens called themselves *Clodii*, while others still retained the more archaic spelling of the name.

History of
the diph-
thongs in
Latin.

The original diphthong *ai* is frequent in the oldest Latin inscriptions and survives even in those of the time of the Empire, both in the body of a word and also in the suffixes of cases. In the inscriptions on the tombs of the Scipios, e.g. (B.C. 250–150 circ.), we find *aiulilis*, *aide* (*aedem*), *Gnaivod* (*Gnaeo*), *quairatis*; but side by side with the last form in the same inscription we find *aetate*. That this form *ai* however was originally dissyllabic is proved by its scansion in the older poets (e.g. *magnai rei publicai gratia*, Plaut. *Mil.* 103; a scansion which became a traditional archaism in poetry, e.g. *Aen.* 3. 354, 6. 747) and by the fact that the second component of the diphthong is represented sometimes in inscriptions by *ei* (e.g. *conquaeisivi*). The diphthong passed into the monophthong about B.C. 200–150, and was written *ae*; but the spelling *ai* long survived, especially in the legal style, though it cannot be supposed to represent in the ordinary language any difference in pronunciation.

In the few cases where *ai* occurs in classical Latin it represents not an original diphthong but the result of a contraction, e.g. *maior* from *mahior*, *aio* from *ahio*. In originally unaccented syllables *ai* (*ae*) becomes *i*, e.g. *incido* (*caedo*) (v. p. 79).

The diphthong *au* may either represent an original diphthong or be a secondary product. In this latter case it is the regular representative of an original *ou*, as for example:

δφης

avilla.

δφιωρός

avis, autumo.

Formed from adj.**autumus* (cf. *maritumus*) originally used of augury; cf. *δφιομαι*.

λούω	lavo.
πτοέω	paveo.
οὔς	auris.
κοέω	caveo.
κόος	cavus.
θοός	faveo.

The alternation of *au* with *ō* may be a relic of the original *ou*, e.g. *lomentum*, *lotus*; *ospicor*, *oricilla*; *claudicat*, (*clodicat*, Cic. *de Or.* 2. 61); cf. *frustra* (*fraus*).

On the other hand Latin *au* is often developed from an original *ō*. Thus we find

cautes but *cōs*, *cōtes*; cf. *cātus*, Indo-European *katós*.

plando beside *plōdo*. The compounds *explodo*, etc. show that the *ō* is original, as *au* in composition becomes *ū* (*claudio*, *conclūdo*).

ausculum, etc. beside *ōs*, *osculum*, Sk. *ās*; cf. *aureae*, *auriga* (also *origa*), *ostium* (also *austium*).

cauda, *caudex* beside *cōda*, *cōdex*.

aula beside *olla*.

Claudius, *claudus*, beside *Clodius* (κλαδαρός?).

fances but *fōcale*, *suffocare*.

Plautus but *Plotius*, *semplotia*.

Haurio may be connected with καταῦσαι, καθαῦσαι (Hesych.), ἔφανστήρ (Aesch. *Frag.* 355), but in composition we have *dehūrīre*. Others suppose the stem to be *ghōs*-, Sk. *ghas*, seen in *hasta*; cf. '*latus hasta haurire*.' (Cf. *K. Z.* xxviii. 157. sq.)

But *fautus*, *cautus*, not **fotus*, **cotus*. That *au* was not the same in pronunciation as *ō* is proved by the story in Suet. *Vesp.* 22. Mestrius Florus a Consular having pronounced *plaustra* as *plostra* was greeted the next day by Vespasian as *Flaurus*¹.

Au is the most stable of the Latin diphthongs, but nevertheless began very early to pass into the sounds *ō* or *ū*. In one of the oldest inscriptions we have, we find the form *Pola* for *Paula*. We may compare the representation of *au* in Greek by *ao* (Meyer, *Gk. Gr.* § 118).

¹ In the common language *au* was often corrupted to *o* without any philological justification, e.g. *ōrum* for *aurum*, where *au* is original (cf. ἡφέως, Sk. *aupās*).

In originally unaccented syllables *au* becomes *ū* in *excūso*, *conclūdo*; but *oe* in *oboedio*. For this diphthong in combination with other sounds cf. p. 189.

The diphthong *ei* seems to have been pronounced with *Ei*, a sound midway between *ē* and *ī*, and with one or other of these sounds it early became identified. Only in the earliest inscriptions is it to be taken as a true diphthong; elsewhere it is merely a graphic representation of *ē* or *ī*. Lucilius attempted to lay down rules for the use of *ei* and *ī*, but they were not observed (Ritschl *Op.* 4. 376), and practically even in the very earliest inscriptions we find *ī* and *ei* side by side. So great is the confusion between the three sounds *ei*, *i*, *ē*, or rather so near did they approach one another in pronunciation, that we find *ei* used to represent *ē*, *ī*, even in cases where there is no trace of an original diphthong (e.g. *decrevit*, *audeire*). The confusion even extends to the short vowels, so that we find *impeirium*, *heicce*; and in many instances we get the same form indifferently with *ē*, *ī*, *ei*, e.g. *heri*, *here*, *herei* (Ritschl *Op.* 2. 622).

In *meio*, *peior* the diphthong is the result of a contraction (*meihio*, *peiior*).

The diphthong *eu* only appears in the single instance of *Eu*, *Leucesie* in the *Carmen Saliare*. Elsewhere, according to an invariable Latin law, it becomes *ou* and then later *ū*.

The rules for the change of an original *eu* in Latin are as follows:

1. *Eu* invariably becomes *ou*.
2. Before a vowel this *ou* remains unchanged: e.g. *novus*: *νέος*, *novem*: *ἐννέα*, *moveo*: *ἀμείω*, *ovare*: *εὐάω*, *Iov-is*: *Ζεύς*.
3. Before a consonant it becomes *ū*, e.g. *Λεύκιος*, *Loucius* (inscriptions) *Lūcius*: *ζεύγεα*, *jūgera*: *ἀμείω*, *mutare*: *nundinae*, (*novem*, *nouŋ*).

An *eu* in Latin, where not the result of contraction, represents an original *ŋghu*; e.g. *levis*: *ἐλαχύς*, *brevis*: *βραχύς* (Indo-European *lnghú-*, *brnghú-*).

Neuter, *neutiquam*, *neu*, *ceu*, *seu* are only the result of an abbreviated pronunciation of *ne-ūtiquam*, etc.

For the diphthong in unaccented syllables, etc. v. p. 187.

Oi.

This diphthong existed in early Latin and survived to the beginning of the first century B.C. in the formal and archaic style, e.g. *oina*, *moincipieis* in the *Lex Thoria*. But just as *ai* became *ae*, so *oi* became *oe*, and this latter diphthong survived in the time of Cicero in the archaic style (e.g. *de Legg.* iii. §§ 6-11 we find *ploera*, *oenus*, *coerari*, *oesus*) and always in some words (*foedus*, *poena*, *Poeni*, *Coelius*); *oe* pronounced as a modified German *ö*, then sunk in most words to *ū*, but we find *moenia* and *munia*, *poenire* and *punire* side by side, and always *poena*, *Poenus*; cf. *oboedire*. The change may be paralleled by the change *oi*, *oe*, *v*, of the Boeotian dialect (Meyer, *Gk. Gr.* § 114).

In some few words (e.g. *fidus*, *vicus*, *vinum*) an original *oi* may have become *i* by an alteration of *oi* to *ei*, but of these *vicus*, *vinum* may be borrowed.

The diphthong *oe* results from a contraction in *coepe* (*co-epi*), *coetus* (*co-itus*).

Ou.

The diphthong *ou* in Latin never represents an original *ou*, that is an *ou* existing before the separate existence of the Latin language. That diphthong, if ever existing at all in Latin, is represented by *ū*.

Boves for example is perhaps borrowed from the Italian dialects; as we shall see elsewhere, the initial consonant in pure Latin can only be *v* representing Indo-European *g* initial before a vowel.

Ovis is similarly borrowed; the true Latin form is **avis*¹, which survives in *avilla*, *avena* (sheep-grass).

This *ou* representing an original *eu* when accented is kept before vowels, in which case the second element of the diphthong becomes consonantal, but in unaccented syllables it sinks to *ū*; so *nóvus* beside *dénuo*, *monui* (= *monē-ūi*).

The old forms *sovo*, *soveis* of the inscriptions by the side of *suus*, *tuus* may be explained by supposing the original exist-

¹ *Ovis* instead of *avis* may possibly be due to an assimilation to *bovis*. *Avilla*, *arena* may come from the stem *ag-* in *agnus*.

ence of two parallel stems, so that $\acute{\epsilon}\acute{o}s$ (*seuos*) corresponds to *sovos*, δs (*σfos*) to *suus*.

Before consonants this *ou* becomes $\bar{u}$ or $\bar{o}$, the latter being apparently a latter formation; e.g. the regular participle of *moueo* is **mūtus*, which appears in *mutare*; *mōtus* is a later formation with the vocalisation of the finite verb. So we have *dōbus* and *būbus*, *ōpilio* and *ūpilio*, *rōbigo* and *rūbigo* ($\xi\text{-}\rho\epsilon\nu\theta\text{-os}$).

Tabulating our results we find:

Latin $\check{e}u$ = original ηghu .
 $\check{a}u$ ($\bar{o}$) = original $a\bar{u}$, ou .
 δu ($\bar{u}$) = original $e\bar{u}$.

The semivowels of the Indo-European alphabet are $\check{i}$, $\check{u}$, r , The Semi-vowels.
 l , m , n .

The characteristic of a semivowel is that under certain circumstances it plays the part of a vowel, i.e. it is capable of forming a syllable by itself either with or without accompanying consonants, while in other cases it is a consonant, that is, it possesses no proper sound of its own but combines with a vowel proper to form a syllable.

For example in the word $\pi\epsilon i\theta\omega$ the i is consonantal. It has no proper and independent sound of its own but acts only, to adopt De Saussure's term, as 'a sonantic coefficient' of the proper vowel ϵ . (Cf. De Sauss. p. 8.)

But in the thematic aorist, e.g. $\xi\text{-}\pi i\theta\text{-o-v}$, which, as we have seen (p. 57), in the case of roots containing ϵ in the present stem, is regularly formed by the expulsion of the ϵ , the i appears no longer accompanied by another vowel but stands by itself between two consonants. *Ipsa facto* it ceases to be a mere coefficient glide-sound to ϵ , but becomes fully and independently vocal. Expulsion of ϵ .

What happens in the stems $\pi\epsilon i\theta\text{-}$, $\pi i\theta\text{-}$, with the semivowel i , happens also in the stems $\phi\epsilon\nu\gamma\text{-}$, $\phi\nu\gamma\text{-}$ (of $\phi\epsilon\acute{\upsilon}\gamma\omega$, $\phi\acute{\upsilon}\gamma\omega\nu$), with the semivowel u .

With regard to these semivowels $\check{i}$, $\check{u}$, we may say generally that when appearing between two consonants they are autophthongous or fully vocal: when following a vowel

they are symphthongous or merge with the preceding vowel into one sound called a diphthong; when coming between a consonant and a vowel they are fully consonantal¹.

I and *u* consonantal are in this book written *î*, *û*.

Liquids
and
Nasals.

Now *r*, *l*, *m* and *n* stand exactly on the same footing as *î* and *û*. What happens in the one case, happens also in the other. It has been pointed out (p. 57), that as from *πελθω* we get a strong or thematic aorist *ἐπιθον*, and from *πέλομαι* a thematic aorist *ἐ-πλ-όμην*, both alike characterised by the loss of *ε* in the stem, so from *δέρκ-ομαι*, *κλέπ-τω*, **πενθ-ω* (cf. *πένθ-ος* and *πέλομαι* for *πενθ-ομαι*) we ought to get by expulsion of the *ε* the thematic aorists **ἐ-πνθ-ον*, **ἐ-κλνθ-ον*, **ἐ-δρκνθ-ον*. Now this last form we do actually find in Sanskrit. We have there a form *ádṛṣam*, corresponding exactly to *ἐδρκον*, and we know that the liquids *r*, *l* in Sanskrit have under certain circumstances the value of vowels; that is, they form a syllable by themselves without the addition of any written vowel. From the stem *darh*, e. g. we get *á-da-dṛh-anta*, from the stem *par* we get *pi-pr-más*, etc., where *r* represents the liquid with the value of a vowel, and where the liquid is no longer a consonant, but is fully and independently sonant.

Liquid
Sonants.

Brugmann and his followers have sufficiently justified the hypothesis that this liquid sonant is not a special development of Sanskrit, but existed as such in the original Indo-European language, and that traces of it are found in all branches of the Indo-European family. But while in Sanskrit the vowel-sound of the liquid is never written, in the other languages it is written. This liquid sonant, the sound of which would seem to have been indefinite, found no peculiar equivalent in the alphabets of the different nations: each represented it by that vowel, or combination of vowels, which it seemed to them most to resemble. When, therefore, we find in Greek *καρδί-α*, in Latin *cordi-s*, in Gothic *hairto*, we must not conclude that a Greek *α* answers to a Latin *ο* and Gothic *ai*, but,

¹ In such cases as *ρητ*, *δῦτμή*, etc. the semivowels do not really immediately follow the vowel, an intermediate sound having dropped out, e. g. *ρηφι*.

looking to the Sanskrit *ḥṛdī*, we must suppose that the variation of vowels in the three languages is due to the fact that the vowel-sound of the liquid sonant, not finding its exact equivalent in any alphabet, was differently represented in each.

The liquid sonants (*l, r*) are thus represented in the different languages with which we are concerned :

<i>r</i> = Sk. <i>r</i>	Gk. <i>ap, pa</i>	Lat. or.
<i>l</i> = Sk. <i>r</i>	Gk. <i>al, al</i>	Lat. <i>ol, ul</i> .

But it cannot be supposed that eventually, at any rate, the Greek *al*, e. g., as the graphical representation of a sonant, differed in pronunciation any more than in writing from *al* representing an original *al*.

In those cases where we have only one language to go by, it is often impossible to be certain whether that combination of letters which may represent a liquid sonant does actually stand for it in any given case, and not rather for an original vowel plus an original consonant. Where, however, the same stem in a corresponding formation or inflexion is found in a kindred language, the agreement or non-agreement of the vowel is a sure test. The Greek *ἄλλος*, e. g. (for *ἄλιος*) compared with the Latin *alius*, shows by the agreement of the vowels that both correspond to an original *alios* : the Greek *καρδία*, as compared with the Latin *cordi-s*, shows by the disagreement of the vowels that both correspond to an original *ḥṛdi-*.

The existence of nasal sonants is more hypothetical. Liquid ^{Nasal} Sonants exist as such in Sanskrit : nasal sonants have left slight trace of their nasal character even in that language. But a comparison of the following words out of many that might be given leaves little doubt on the subject:

<i>ταρός</i>	Sk. <i>taṭá</i>	Lat. -tentus.
<i>βαρός</i>	<i>gaṭá</i>	-ventus.
<i>(αὐτό)ματος</i>	<i>maṭá</i>	{(com)mentus.
<i>δ-νομα</i>	<i>náma</i>	nomen.
<i>ἐπτά</i>	<i>sapṭá</i>	septem, etc.

Evidently that which happened in the case of the liquid

sonants has happened here : only that in Sanskrit and Greek the nasal has disappeared, leaving no trace of itself whatever, and being represented solely by the vowel-sound with which it was accompanied. *rarós, talá, -tentus* must all go back to an original *tnló*, where *ŋ* represents the nasal sonant. In these cases, therefore, there is no trace whatever left of the nasal in Greek and Sanskrit, but it is simply represented by its accompanying vowel-sound. In Latin, on the other hand, both the consonantal and the vowel-sound of the sonant are represented in writing, and the result *en* is not distinguishable, except by inference from connected words, from an original vowel plus an original consonant.

The representatives of the nasal sonants (*ŋ, ɲ*) in the Sanskrit, Greek, and Latin are as follows :

<i>ŋ</i> = Sk. <i>a</i>	Gk. <i>a, av</i>	Lat. <i>en.</i>
<i>ɲ</i> = Sk. <i>a</i>	Gk. <i>a, aμ</i>	Lat. <i>em.</i>

The special treatment of the sonants in various combinations will be more properly considered under the respective letters.

It may be noticed that the liquid and nasal sonants have their representatives in modern languages.

When we say '*My father is old*,' '*My ankle is hurt*,' '*Paddington Station*,' '*Give them a book*,' the words '*father*,' '*ankle*,' are dissyllabic, '*Paddington*' is trisyllabic, '*them*' forms a syllable. But in no case is any definite vowel heard in the final syllable : the syllables are formed by the trilling of the liquids, and the grunting of the nasals. The sounds might more properly be represented by *fathŋ, ankɭ, Paddingtn, thɲ*.

So in French, e.g. *théâtre* is trisyllabic, but the last syllable is only the liquid sonant, and the same may be said of words like *edel* in German.

The Semi-vowels as Sonants.

As will be seen in dealing with the question of Ablaut (p. 223), the quantity of *i* or *u* in any syllable depends upon the accent of the word in which they occur. It would have been possible to group *i* and *u* as sonants along with the hard vowels *a, e, o*, but in consideration of the twofold nature of their functions we have preferred to deal with them separately.

Indo-European *ǵ* = Greek *ζ*, Latin *ǵ*:Indo-European *f*.

δέκη	in-dic-are.
ξ-πιθ-ον	fid-es.
Ῥιδ-εῖν, Ῥιδ-ρις, Ῥισ-τωρ	vid-eo.
ξ-Ῥικ-τον	vic-em.
ἡ-Ῥίθεῖος	vidu-us.
μινύθειν	minuere.
-ικός	-icus.
ἀμφί	ambi-.
στικ-τός	in-stig-are.
κίειν	ci-ere.
ξ-λιπ-ον	re-lic-tus.
-ιος	-ius.
ἡμαλῖά (measure of meal, Hesych.)	} simila, similago.
Ῥίον	viola.
ῖν (αὐτήν· Κύπριοι Hesych.)	i-s.

With *ῖν* the Cyprian for *αὐτήν* and *αὐτόν* we may compare the demonstrative -ι of *οὐτως-ί*, or else it answers to *σῆν*.

προσ-ιτός red-itus.

In *ῖχνος* the guttural has, as often, been aspirated before the nasal. *ῖχνος* possibly answers to *imago* for *ihmago**.

Indo-European *ǵ* = Greek *ζ*, Latin *ǵ*:Indo-European *i*.

Ῥίς	vis.
εἶμεν (ἐσ-ῖμεν)	s-imus.
Ῥρίγος or σρῖγος	frigus.
θλίβω	af-flig-ere.
θυγγάνω (✓ <i>dhīg</i> with pre- sent stem nasalised)	} figo.
Ῥίός (for <i>Ῥίος</i> cf. <i>Ῥίσο- Ῥεντ-ς</i> , <i>λόεις</i>)	} <i>vīrus</i> , <i>vīrosus</i> (<i>vīroqentus</i>).
Ῥιτέα	vitex, vitis, viere, vimen.
ἰθαρός	Idus (properly 'the full moon').

Hesychius gives *ἰθαράϊς*, which has a number of senses; in the sense of *καθαρός* the word comes in the *Anthology* xv. 22 *κρανῶν ἰθαράν*. Hesychius also gives *ἰθαρ· εὐθείως*, which, according to Cobet, is for Homeric *εἰθαρ*.

κλίνω, κλιτός	clivus, inclino, Clitumnus.
κνῖσα	nīdor.
πίων, πτύω (= πιυχω.)	pituita.
κρίμα	crimen.
ἰξός	viscus.

Indo-Euro-
pean ũ.

Indo-European ũ = Greek ũ, Latin ũ :

ζυγόν	jugum.
φυγή	fuga.
μῦα (for μυσ-χα)	musca.
φυθμήν (for φυθμην)	fundus (for fud-nus).

The initial aspirate of *φυθμην* changed according to Grassmann's law of dissimilation (cf. p. 174).

τύμβος	tŭmere.
ὑπό	sub.
ὑπέρ	super.

As the Sk. *upa*, *upari* show no initial spirant, the Greek and Latin forms are probably for *ἐξ-υπό*, *ἐξ-υπέρ*, with the *ε* of the first compound lost before the accented syllable.

δύω, δύο	duo.
λύχνος	luc-erna.
ἐρυθρός	ruber
κλύειν	cluere.
κλυτός	inclutus.

Indo-Euro-
pean ũ.

Indo-European ũ = Greek ũ, Latin ũ :

γλύφω	glubo.
θυμός	fumus.
πῦρ	purus.
μῦς	mus.
νῦν	nun-c.
σκήτος	scutum.
ῦς, σῦς	sus.

The retention of the initial *σ* in Greek may be due to assimilation.

Στρυμών Rumo.

This is the old name of the Tiber; the root is *√sreu*; cf. Eng. *stream*.

ζύμη	jus.
μύω	mutus.
πύθω	puteo.
βου-λῦ-τός.	so-lū-tus.

Indo-European *j*, at the beginning of a word, appears in Greek as the rough breathing, in Latin as *j* : Semi-vowels as Consonants.

ῥς	Sk. <i>yás</i> .	
ὑμεῖς, ὕμεις	Sk. <i>yusma</i> .	
ὑσμίνη	Sk. <i>yudh-</i> .	
ἥπαρ	Sk. <i>yákr̥t</i>	Lat. <i>jecur</i> .

Initial aspiration in Greek is frequently irregular (cf. p. 173).

This semi-consonantal *j* must be distinguished from the spirant *j*, which appears initially in Greek as ζ, though in Sanskrit, Latin and English, original *j* is represented by the same letter as *j*, e. g.

Sk. <i>yugám</i>	ζυγόν	jugum	yoke.
	ῥρα		year.
<i>yákr̥t</i>	ἥπαρ	jecur.	

Answering to Sk. *√yaj* (offer) we have in Greek *ἀγ-ιος*; answering to Sk. *√yas* (be heated) we have Greek *ζέω*.

In Greek *Ζεύς* the *Z* originated in an original *dj-*, cf. Sanskrit *dyāús*, Latin *Iov-is*, *Dies-piter*.

Indo-European *j* between two vowels fell out in Greek after all vowels except *v*, e. g. :

δFεῖος	= δέος.
δεδFοχα	= δειδω (cf. p. 20).
τιμαῖω	= τιμάω.
φιλεῖω	= φιλέω.
δηλοῖω	= δηλόω.

κείαται should pass to *κείαται*, but on the analogy of *κείμεαι* the form *κείαται* is kept as well as the correct form. This word really represents *κειῖνται*.

Consonantal *j* appears instead of *i* in certain words where the diphthong in the interior of a word appears metrically as short, e. g. :

N. 275. οὐδ' ἀρετὴν οἶος ἔσσι (οἶος = ὁ-ιος).

Σ. 105. τοῖος ἐὼν οἶος οὔτις Ἀχαιῶν χαλκοχιτώνων.

Π. 235. ἀνιπτόποδες χαμαιεῦναι (= χαμα-ξευναι).

υ. 379. ἐμπᾶιον (= ἐμπα-ιον).

The *ι*, instead of forming a diphthong with the preceding vowel, plays the part of initial consonant to the succeeding syllable.

This consonantal *ι* also appears in the so-called shortening of a diphthong in hiatus, e. g. ἄνδρα μοι ἔννεπε (= ἄνδρα μο-ι ἔννεπε), δ. 429 Αἰγυπτίῃ, B. 537 Ἰστιάϊαν, B. 811 ἔστι δέ τις προπάρουθε πόλιος αἰπεῖα κολώνη, B. 415 δηλοῖο.

υ.

ι becomes *ι*, -ίων of comparatives = -ίων, Sanskrit -īyams. And in presents like ἰδίω (Hom. ἰδῖον υ. 204), κονίω, μηνίω (B. 769), κηκίω (Soph. Phil. 697) πολλὺς δ' ἀνεκῆκίεν ἰδρώς (N. 705) the -ίω stands for -ιω.

Such explanations, however, both of the shortening of diphthongs and the alternation of *ι* and *ι̃* are to be regarded as hypothetical.

Consonantal *υ* in Greek.

The consonantal *υ* is not to be distinguished in Greek from the digamma, the spirant sound corresponding to the Latin *v*, English *w*. There is nothing like the criterion given in the case of consonantal *ι* by the distinction between initial ζ (= spirant *j*) and the rough breathing (= *ι*) in Greek. *Υ* will, therefore, be better treated under the head of the spirants; but we give a few instances below where it appears as *v*:—

ταλαύρινος for ταλα-φρινος.

αὐίαχος for ἀ-φιφαχος: cf. φι-φάχ-η.

ἀνέρυσαν for ἀ-φερ-υσαν.

✓ *vel.* εὔληρα for ἐ-φληρα, Lat. *lora*, Hesych. αὔληρον.

εὐρύς for ἐ-φρύς, Sk. *varīyas*.

ἀπαυράω = ἀπ-α-φράω.

so ἀπούρας = ἀπο-φρας: cf. ἀπό-ερσε (*verrere*).

✓ *veg.* { αὐξάνω, for ἀ-φξάνω: cf. ἀ-φέξω, Lat. *veg-co*.

✓ *ug.* { αὐγή, for ἀ-φγή: cf. ὑγής = Sk. *ugrá*.

Forms like κοῦρος for κορφος will be explained later (p. 185).

In Latin the semivowels *i* and *u* between vowels either *i* and *u* in appear as consonants or else disappear altogether. Latin.

Consonantal *u*, after an originally unaccented vowel, appears as *v*, as, for instance,

navis	beside Greek	νηός.
clavis	„	κληίς.
scaevus	„	σκαίφος.
laevus	„	λαίφος.
aevum	„	αίφών.
(bovis	„	βοφός).
gravis	„	βαρύς.

After accented vowels *i* and *u* disappear,

bōere but *bōvāre* corresponding to βοφᾶν.

So *ama-i-o* becomes *amo*, as τιμαίω, τιμῶ.

mone-i-o becomes *moneo*, as φιλέω, φιλῶ.

audi-i-o becomes *audio*, like κηκίω, ἰδίω.

congrū-i-o becomes *congruo*, as βρνίω, βρύω.

After the loss of the semi-consonantal *i*, the final vowel of the stem is shortened before the following vowel, but the original quantity appears, for instance, in *fū-vi-mus* (Ennius in Cic. *de Orat.* 3. 42. § 168). Compare the length of *v* in *φύομεν* (Ar. *Av.* 106). Similar cases are *ple-i-oses*, which becomes *pleores* (in S. C. *de Bacch.*), *plures*; cf. πλε-χ-ων. So *aure-i-us* becomes *aureus*; cf. χρύσε-ι-ος, χρύσεος. *e-i-o* becomes *eo*; cf. εἶμι.

So an original *dhu-i-o* gives *suffio*, Greek θύω, θυίω, and *dhu-i-o* gives *fio*, Greek φύω Aeol. φυίω and φῆτύω.

Before unaccented vowels *i*, *u* are consonantal, even in classical times in poetry. *genūa* (—), *abīete* (—), *tenūia* (—), and so too *mīluus* or *milvus* indifferently.

After consonants *ui*, *uo* become *vi*, *vo*, as *seluo* becomes *solvo*, *veluo* becomes *volvo*, *suaduis* becomes *suavis*, *suavis*.

The combinations *au*, *ou*, *eu* have been treated under the diphthongs, while those of *ue* with consonants will be treated under Consonantal Combinations.

The origin and nature of liquid sonants have been sufficiently explained (p. 57). We need only repeat the law, that the liquid sonants in Greek.

liquids appear as consonants before vowels, as sonants before consonants. As consonants they will be treated later on ; as sonants they appear in the following instances. γ = Gk. $\alpha\rho$, $\rho\alpha$. λ = Gk. $\alpha\lambda$, $\lambda\alpha$. We can classify them either, as below, according to the different formations in which they occur, or according to the particular sounds before which they appear, e. g. :

- (1) Before consonantal sounds, and at the end of a word,
e. g. in *τέτρα-τος*, *πατρά-σι*, *ἦπαρ*.
- (2) Before χ as in *σπαίρω* (for *σπαρ-ιω*), *σκάλλω* (for *σκαλιω*).
- (3) As transitional sounds before sonants with a following
 r or l , e. g. *βαρ-ύς* (*βγρ-*), *τάλ-ᾱς* (*τλ-*).

In thematic aorists.

Liquid sonants, classified according to the formation in which they occur, appear in simple thematic aorists from present stems containing ρ or λ , e. g. pres. stem *δερκ*, thematic aor. *ἔδρακον* (*ἔδρκον*). The same sonant appears in the Homeric adverb *ὑπόδρα* for *ὑποδρῆκ*, the Sanskrit *-drc-*. κ in Greek disappears at the end of a word (except in *ἐκ*, *οὐκ*), and we have *ὑπόδρα* left.

$\pi\epsilon\rho\theta-$	$\left\{ \begin{array}{l} \text{ἔπραθον (ἔπρθον)} \\ \text{ἔπράθετο} \\ \text{διαπραθείειν} \end{array} \right\}$	Homeric forms.
$\pi\epsilon\rho\delta-$	$\left\{ \begin{array}{l} \text{ἔπαρδον (ἔπρδον).} \\ \text{ἀποπαρδών, παρδήσομαι.} \end{array} \right\}$	
$\tau\epsilon\rho\pi-$	$\tau\alpha\rho\acute{\omega}\mu\epsilon\theta\alpha$ ($\tau\rho\pi-$).	
$\tau\rho\epsilon\phi-$	$\xi\tau\rho\alpha\phi\omicron\nu$ ($\xi\tau\rho\phi\omicron\nu$).	

According to Veitch, the form is exceedingly rare, if not doubtful. The best MSS. give *ἔτραφε* (Ψ. 90) and *ἔτραφε δ' ἐνδυνέως καὶ σὺν θεράποντι ὀνόμηνεν* (Φ. 279). So also in B. 661 *Τληπόλεμος δ' ἐπεὶ οὖν τράφ' ἐνὶ μεγάρῳ εὐπῆκτος*, but in inferior authorities we find *τράφη ἐν*, while in T. 201 we find *ὅς τράφη ἐν δῆμῳ Ἰθάκης*, which is universally accepted; cf. also A. 222. The strong aor. pass. *ἔτραφην* (*ἔτρφην*) is common.

$\pi\epsilon\acute{\iota}\rho-\omega$ ($\pi\epsilon\rho-\chi\omega$)	$\left\{ \begin{array}{l} \text{ἀνα-παρ-εἰς Hdt. 9. 94.} \\ \text{δια-παρῆ Lucian Pisc. 51.} \end{array} \right\}$
$\sigma\tau\acute{\epsilon}\lambda\lambda\omega$	$\xi\sigma\tau\acute{\alpha}\lambda\eta\nu$.

The very rare form *ἑστάλθην* (C. I. G. 3053) is a case of false analogy.

$\kappa\epsilon\acute{\iota}\rho\omega$ ($\kappa\epsilon\rho-\chi\omega$)	$\kappa\alpha\rho\grave{\eta}$ Hdt. 4. 127, etc.
$\beta\rho\epsilon\chi-$	$\xi\beta\rho\acute{\alpha}\chi\eta\nu$ Anacreont. 31. 26.

$\left. \begin{array}{l} \phi\theta\epsilon\rho-, \phi\theta\epsilon\acute{\iota}\rho\omega \\ \text{(for } \phi\theta\epsilon\rho\acute{\iota}\omega) \end{array} \right\} \acute{\epsilon}\phi\theta\acute{\alpha}\rho\eta\nu \text{ (}\acute{\epsilon}\phi\theta\eta\gamma\eta\nu\text{)}.$

Here the liquid has become sonant, though not followed by a consonant: strictly we should have had $\acute{\epsilon}\phi\theta\eta\gamma\eta\nu$, but $\acute{\epsilon}\phi\theta\acute{\alpha}\rho\eta\nu$ is due to the analogy of $\acute{\epsilon}\phi\theta\alpha\rho\mu\alpha\iota$ ($\acute{\epsilon}\phi\theta\eta\gamma\mu\alpha\iota$) and the fact that in all other forms of the verb a vowel appears before the ρ .

$\acute{\epsilon}\kappa\rho\alpha\gamma\omicron\nu$, $\acute{\epsilon}\delta\rho\alpha\mu\omicron\nu$, $\acute{\epsilon}\pi\tau\alpha\rho\omicron\nu$, $\acute{\epsilon}\beta\alpha\lambda\omicron\nu$ have no corresponding present stem in ϵ . The true present of $\beta\acute{\alpha}\lambda\lambda\omega$, as we shall see later on, appears in the $\acute{\epsilon}\sigma\delta\acute{\epsilon}\lambda\lambda\epsilon\iota\nu$ of the Arcadian dialect. But the existence of stems in $\delta\rho\epsilon\mu-$, $\pi\tau\epsilon\rho-$ is vouched for by the forms $\delta\rho\acute{\omicron}\mu\omicron\varsigma$, $\pi\tau\acute{\omicron}\rho\omicron\varsigma$, where we see the $\omicron$ which regularly alternates with ϵ in the same root.

For $\acute{\epsilon}\pi\tau\alpha\rho\omicron\nu$ the present $\pi\tau\acute{\alpha}\rho\nu\nu\mu\iota$ is only very late, while the form $\pi\tau\acute{\alpha}\rho\omega$, which is given in Aristotle *Probl.* 33. 1. 3, etc., should rather be $\pi\tau\acute{\alpha}\rho\omega$, as Dindorf indeed is inclined to read. Upon the analogy of $\phi\theta\acute{\epsilon}\acute{\iota}\rho\omega$ we are justified in reconstructing $\pi\tau\acute{\alpha}\rho\omega$ or $\pi\tau\acute{\alpha}\rho\omega$ as $\pi\tau\acute{\epsilon}\acute{\iota}\rho\omega$ (for $\pi\tau\epsilon\rho\acute{\iota}\omega$), when we should have the regular series $\pi\tau\epsilon\rho-\acute{\iota}\omega$, $\pi\tau\acute{\omicron}\rho\omicron\varsigma$, $\acute{\epsilon}\pi\tau\alpha\rho\omicron\nu$.

Of reduplicated aorists we have $\tau\epsilon\tau\acute{\alpha}\rho\pi\epsilon\tau\omicron$, which admits of the same explanation as $\tau\alpha\rho\acute{\omega}\mu\epsilon\theta\alpha$.

The perfect pass., like the thematic aorist, is regularly formed by the expulsion of the ϵ . In the
Perfect
Passive.

$\sigma\pi\epsilon\rho-$ in $\sigma\pi\acute{\epsilon}\acute{\iota}\rho\omega$ for $\sigma\pi\epsilon\rho-\acute{\iota}\omega$	$\acute{\epsilon}-\sigma\pi\alpha\rho-\tau\alpha\iota$.
$\delta\epsilon\rho-$	$\delta\epsilon-\delta\alpha\rho-\acute{\mu}\acute{\epsilon}\nu\omicron\varsigma$.
$\phi\theta\epsilon\rho-$ in $\phi\theta\acute{\epsilon}\acute{\iota}\rho\omega$	$\acute{\epsilon}-\phi\theta\alpha\rho-\mu\alpha\iota$.
$\mu\epsilon\rho-$ in $\mu\acute{\epsilon}\acute{\iota}\rho\omicron\mu\alpha\iota$ for $\mu\epsilon\rho-\acute{\iota}\rho\omicron\mu\alpha\iota$	$\acute{\epsilon}\acute{\iota}\mu\alpha\rho\tau\alpha\iota$ ($\acute{\epsilon}\acute{\iota}\mu\eta\gamma\tau\alpha\iota$).

The root of $\mu\acute{\epsilon}\acute{\iota}\rho\omicron\mu\alpha\iota$ is $\sigma\mu\epsilon\rho-$, and $\acute{\epsilon}\acute{\iota}\mu\alpha\rho\tau\alpha\iota$ is for $\sigma\sigma\mu\eta\gamma\tau\alpha\iota$. Hesychius has a gloss $\acute{\epsilon}\mu\beta\rho\alpha\tau\alpha\iota$ $\acute{\epsilon}\acute{\iota}\mu\alpha\rho\tau\alpha\iota$, and this form shows a metathesis of the liquid and the insertion of a euphonic β , as in $\acute{\eta}\mu-\beta-\rho\omicron\tau\omicron\nu$, $\mu\epsilon\sigma\eta\mu-\beta-\rho\acute{\iota}\alpha$, etc. The late forms $\mu\acute{\epsilon}\mu\alpha\rho\tau\alpha\iota$ and $\mu\epsilon\mu\acute{\omicron}\rho\eta\tau\alpha\iota$ (Ap. Rh. 1. 646) are on the analogy of the perfects with syllabic reduplication, when the original spirant of the root had been forgotten; $\mu\epsilon\mu\acute{\omicron}\rho\eta\tau\alpha\iota$, $\mu\epsilon\mu\omicron\rho\eta\mu\acute{\epsilon}\nu\omicron\varsigma$ owe their $\omicron$ to the example of $\acute{\epsilon}\mu\omicron\rho\alpha$.

$\kappa\epsilon\rho-$ in $\kappa\acute{\epsilon}\acute{\iota}\rho\omega$	$\kappa\acute{\epsilon}\kappa\alpha\rho\mu\alpha\iota$.
$\sigma\tau\epsilon\lambda-$ in $\sigma\tau\acute{\epsilon}\lambda\lambda\omega$ for $\sigma\tau\epsilon\lambda\acute{\iota}\omega$	$\acute{\epsilon}\sigma\tau\alpha\lambda\mu\alpha\iota$.
$\sigma\tau\rho\epsilon\phi-$	$\acute{\epsilon}\sigma\tau\rho\alpha\mu\mu\alpha\iota$.
$\tau\rho\epsilon\phi-$	$\tau\acute{\epsilon}\theta\rho\alpha\mu\mu\alpha\iota$.

The real root of this word is $\theta\rho\epsilon\phi-$, which has become $\tau\rho\epsilon\phi-$ in the present stem according to Grassmann's law (p. 174); the initial aspirate reappears where the second aspirate does not occur.

The present indic. of verbs in $-\mu\iota$ is regularly formed with In Present
stems.

a long vowel in the singular, and a short vowel in the dual and plural, e.g.

τίθημι, τίθεμεν.

δίδωμι, δίδομεν.

Similarly from an assumed *πιμπελμι, Sanskrit *pīrarmi*, we get a 1st pers. pl. *πιμπλαμεν* (πιμ-πλ-μεν) corresponding to the Sanskrit *pīrṛmās*.

The Greek present actually in use is *πίμπλημι*, and the *η* is not only Ionic but Doric. Thus in the fragments of Epicharmus and Sophron we have *πίμπλη*, *ἐνέπλησαν*, *πλήρης*. It is true that Hesychius gives *πλάθους* *πλήθους*, and that *πλάθουσι* is read in a corrupt chorus of the *Choephores*, 585, but these must be regarded as bad Attic imitations of Doric (cf. Ahrens ii. 132, De Sauss. p. 13). The form *πίμπλημι* is by metathesis for *πιμπελμι*. The loss of the *ε* vowel in those stems which show a short vowel in their full form, corresponds to the shortening of the long vowel in *δίδωμι*, *δίδομεν*.

πιμπρημι for *πιμπερμι*, like *πίμπλημι*, pl. *πιμπρᾶμεν*.

This verb is post-Homeric, and in Homer we have *πρήθω*.

φερ-

πιφράναι.

The word is only found in the compound *ἔσ-πιφράναι* Aristot. *Hist. Anim.* 5. p. 541 b, 11, but in Attic we have *ἔκ-φερ-ς*, *ἐπ-εῖσ-φρῶ*, which justify the assumption of a root *φερ-* answering to the Sk. *bi-bhar-mi* (cf. Curt. *Verb.* 160, Veitch, p. 611, De Sauss. p. 13).

In Verbals
in -τός.

These verbals, when connected with pres. stems in *e*, show the same loss of *e* that we have already noticed in other formations. In those roots which contain a liquid, the liquid consequently becomes sonant :

δέρ-ω { δρατός (Ψ. 169).
 { δαρτός is late.

κείρω (= κερ-ιω) καρ-τός.

φθείρω (= φθερ-ιω) φθαρ-τός.

φέρ-ω, verbal *φερ-τός*, Sanskrit *bhṛtá*—*φερός* should regularly be *φαρός* : *ἐγερτός* is another exception.

The reduplicated verb *ιάλλω* has a verbal *ιαλτός* Aesch. *Choeph.* 22, where the reduplication is kept contrary to rule.

σπείρω (= σπερ-ιω) σπαρός (Soph. *O. C.* 1534).

From this root is formed, with change of accent, *σάπρον* (cf. *σπείρα*).

In second-
ary present
stems.

The only presents showing a liquid sonant are those formed with the addition of a suffix to the pure verbal stem. We shall see later that the expulsion of the *ε*-sound is inseparably

• • • • •

connected with the phenomena of accentuation. Where the accent originally fell on the stem the vowel was kept: where it fell on the suffix the vowel disappeared. Present stems like *τρέφ-ω*, which are formed without a suffix, took the accent on the stem in the present tense, and consequently the vowel was maintained throughout. Stems, on the other hand, formed with the suffix *-ιo*, *-ιe* often appear with the weak root, and it would, therefore, seem that the accent must have fallen on the suffix. But it is to be noticed that forms with the full root are not less common (e.g. *σπείρω* for *σπεριω* beside *σπαίρω* for *σπαριω*), and in Sanskrit the 'ya-class' (the 4th class of the Hindu Grammarians) regularly takes the accent on the stem. As far as Greek is concerned, we cannot say that the one class is older than the other.

The following show the reduced form of the root in the present stem (Meyer, *Gk. Gr.* p. 11).

ἀσπαίρω for *ἀσπιριω*.

σκαίρω, cf. *σκιρτάω* and *σκεῖρδν ὄντα· σκιρτῶντα* Hesych.

χαίρω, cf. *grātus* (*ghṛto-*), but, on the other hand, *χαρά*, *χάρις*.

γαργαίρω and *φθαίρω* (Doric) uncertain (Ahrens 2. 186).

βάλλω for *βλιω*.

The simple pres. comes in Arc. *ἰσδέλλω*: cf. *βέλος*.

πάλλω for *πιλιω*, compare *πέλας*, and Latin *pello*.

ιάλλω for *σι-σλι-ιω*, Sanskrit *sīartī*.

ἄλλομαι may be for *σλιομαι*, but the vowel of Lat. *salio* is against this: the sonant *l* would in Latin have been represented by **sulio*.

δαιδάλλω is a denominative from *δαίδαλος*.

σφάλλω, cf. *ἔσφηλα*.

δάλλει· κακουργεῖ Hesych.; cf. *doleo*, but also *delere*,

δηλήμων.

ἐχθαίρω for *ἐχθριω*, cf. *ἐχθρός*.

We have already spoken of the reduction of the root upon the addition of suffix *-to* in the formation of verbal nouns. In Nominal Formations.

The suffix *-τι* goes along with expulsion of the radical *e*, and consequent reduction of the root:

bhar-

Sk. *bhṛtī*.

κερ-

κάρσις late.

The original τ passes to σ before ι according to the Greek rule.

ἀγαρρίς· ἄθροισις Hesych.

ἀγαρρίς has been assimilated from ἀγαρσις for ἀγαρ-τι-ς. The full form of the root is found in ἀγείρω for ἀγερ-ιω. The accent of ἀγαρρίς is contrary to the rule of the formation and may be a later corruption.

στελ-

στάλσις late.

δερ-

δάρσις late.

Exceptions to the above rule are to be found in the full root of such nouns in -σις (suffix -τι), as λείψις, ῥήσις, ἄμπωτις, μῆτις, but these are confined to Greek.

The suffix -ύ is accompanied by a reduction of the root

✓merl βαδύ-s Sk. मृदु.

The β of the Greek is euphonic, as in βλώσκω beside ἔμολον. Hesychius gives ἀβλαδέω· ἡδέω, which admits of a connection with Lat. *mollis*, which according to old etymology was for *molidiis*.

πλατύς

Sk. प्रथु.

Unless πλέθρον is related to this root, there is no corresponding form in e .

θρασύς, θαρ-συ-(θαρσύνω), Sanskrit ✓dlhṛ; cf. Θερ-σίτης.
κρατύς, κάρτα, but comparat. κρέσσων.

I.-E. g^hr-, βαρύς, Sk. गुरु, Lat. *gravis*.

λύκος for فلاκος, Sk. वृक-a.

In this word the change of the vowel in Greek is due to the influence of the spirant sound f .

When roots containing e with a subsidiary semivowel are used as nominative themes without a formative suffix, they expel e and reduce the root, as in the Homeric adverb,

δερκ

ὑπό-δρα(κ).

καρδ-ία, κραδ-ίη.

Lat. *cord-* shows a reduced root beside the full form in *κῆρ*.

ἄρκτος Sk. रक्षा Lat. *ursus* (= *orc-sus*).

λαυκανίη (X. 325), cf. Sk. *śṛkvaṃ* (corner of the mouth).

λαυκανίη perhaps for *σλακφανίη* with v epenthesis as in *ταῦρος* (cf. p. 198).

πράσον (πρ)

Lat. *porrum*.

In nouns of relationship and *nomina agentis* in -ter-, we have the reduced stem in the weak cases (cf. p. 299.)

$\pi\alpha\text{-}\tau\rho\text{-}l$	Sk. $\pi i\text{-}tr\text{-}\acute{e}$	Lat. $pa\text{-}tr\text{-}i$.
$\pi\alpha\text{-}\tau\rho\acute{\alpha}\text{-}\sigma i$	$\pi i\text{-}t\acute{\rho}\text{-}\xi u$.	

And in the same way with $\mu\eta\text{-}\tau\rho\acute{\alpha}\text{-}\sigma i$, $\acute{\alpha}\nu\delta\rho\acute{\alpha}\text{-}\sigma i$, $\theta\upsilon\gamma\alpha\rho\acute{\alpha}\text{-}\sigma i$.

In composition we have the reduced form in $\acute{\alpha}\nu\delta\rho\acute{\alpha}\text{-}\pi\omicron\delta\omicron\nu$, but this stands by itself.

In certain neuter words we find a suffix r or rt , e. g. Sanskrit $y\acute{a}k\check{r}t$, Greek $\eta\pi\alpha\rho$, Latin *jecur*.

An exception is to be found in $\omicron\upsilon\theta\alpha\rho$, for in Sanskrit we have $\acute{u}llhar$, which shows that the $\alpha\rho$ does not stand for a liquid sonant, but for original $-ar$.

We have seen that the liquid sonants in Latin are ordinarily represented by ol , or ; but in the case of ol the indeterminate vowel preceding the liquid in the majority of cases became ul , u being the vowel which, if there be no preventing cause, appears before l (p. 71). Liquid sonants in Latin.

From the fact that the Latin vowel-system is less complete than that of the Greek, and that the various forms from the same stem were far more regularly reduced to one pattern, the sonants in Latin are at once rarer and more difficult to identify. The following instances, however, seem pretty certain¹ :—

pello	pulsus ($\rho\lambda\acute{t}\acute{o}$).
vello	vulsus.
per-cello	per-culsus; cf. procul ($\text{proc}\check{u}$) for $\text{proc}\check{u}st$, Sk. $\text{pra-k}\check{r}\check{s}\text{-}ta$ (distant).
sepelio	sepultus.
mel-	mulsus (mixed with honey).
per- $\pi\acute{\epsilon}\rho\text{-}\alpha\varsigma$	porta ($\rho\acute{r}\acute{t}\acute{\alpha}$).
$\kappa\acute{\epsilon}\iota\rho\omega$	curtus ($\kappa\acute{r}\acute{t}\acute{o}$), corresponding to Gk. $\kappa\alpha\rho\acute{\tau}\acute{o}\varsigma$.
$\sigma\pi\acute{\epsilon}\iota\rho\omega$	sportula, from a past part. $\sigma\pi\rho\acute{\tau}\acute{o}\varsigma$ = Gk. $\sigma\pi\acute{\alpha}\rho\tau\omicron\nu$.

¹ In the case of those words containing l , it is impossible to say whether the alternation of e and u is due to the liquid sonant or to the merely phonetic change by which el becomes ol (ul) in Latin everywhere except before i or a second l (p. 189).

All these are past participles (or formations from the past part. stem), taking accent originally on the last.

Morsus would seem to be for *mŕdtús*: the pres. should be **merdo* (appearing in Gk. *σμερδ-νός*, Germ. *Schmerz*, Eng. *smart*): *mordeo* is a derived present = (*s*)*mŕdeio*, originally accented after the stem; or *mordeo* may show the same Ablaut as in *φορέω* beside *φέρω*.

There is the same difficulty about *torreo*, *horreo*. The forms in *e* are seen in *terra* (= *tersa*), *τέρσομαι*, and *χερσός*: *tostus* for **torstus* (*tŕstó-*) probably shows the liquid sonant, but whether the presents are new formations or show the original Ablaut *o* is doubtful.

Other miscellaneous forms are—

cordi- (*kŕdi-*) Gk. *καρδία*, Sk. *hŕdí*.

porrum for **porsum*, Gk. *πράσον*, I.-E. *pŕsós*.

ursus for **orcsus*, Gk. *ἄρκτος*, Sk. *ŕkṣa*. The original form will be *ŕksó-*.

fortis is connected with *fero*, the termination *-tí* originally taking the accent.

sortis, connected with the root *ser-*, which appears in *ex-sero*, *prae-sert-im*, Gk. *ἰάλλω* = *σι-σŕ-ιω*.

jecur, Gk. *ἥπαρ*, Sk. *yákŕt*.

The declension of this word will be discussed later here; it will be enough to observe that the *r* only appears in the nominative: the oblique cases are formed from a stem *jekn-*, Latin *jecinis*. The form *jecinoris* is the result of a confusion of the two stems.

mollis for *mŕduis-*, Gk. *μαλθ-ακός* (*μŕθ-ακός*).

For connection with *βαδύς* (for *μŕδύ-s*), which better explains the *a* which we must suppose in the primitive form, cf. p. 102.

gravis for **grovis*.

We have already seen that a Latin *av* represents an original *ov*. But this **grovis* is itself the result of a metathesis and is for **gorvis*. The metathesis of the liquid explains the retention of the velar guttural as *g*: if it had originally appeared before a vowel, it must have become *v* in Latin (v. p. 187). The original form then will be *grui*, and we can compare the Greek *βαρύς* (v. Havet, *Mém. Soc. Ling.* 6. p. 18).

dormio is for *dŕmŕo*. We can compare *δαρθάνω* (*δŕ-θ-nn-ω*).

multus, *multa* by the side of *melior*, seems also to show a sonant. The comparative keeps the strong form of this root quite regularly (cf. κρείττων beside κράτιστος, ὀλίγος beside ὀλίγος). The Greek μάλλον for μῖον has borrowed its vocalisation from the superlative: *melior* is the older form.

mulceo by the side of ἀ-μέλω may also show a sonant: but the combination *el* passed into *ol* (*ul*) in Latin, except in the forms *eli*, *ell* (v. p. 103 n.): so that the vowel in *mulceo* may be a purely Latin phenomenon. If however it shows a sonant, we may compare the Gk. βρακεῖν (for μγκ-εῖν).

mortī-s cannot be put on the same level with *fortī-s*, as the stem shows *o* everywhere (cf. βροτός), and that vowel is therefore probably original.

cornua may be compared with Sk. *çr̥ṇḡā*, and would then be for *cornḡua*.

We may find the stem in κέραμβυξ (for κερν-), the *ε* being on the analogy of κέρας.

furnus for *fornus*

Sk. *ghṛṇā*, heat.

morbus

Sk. *mṛdh*, enemy.

The nasal sonants differ from the liquid sonants in having no remaining trace of the nasal in Sanskrit and Greek, at any rate in unaccented syllables. Nor are there in the Sanskrit alphabet any nasal semivowels corresponding to the liquid semivowels *l*, *r*. The existence of nasal sonants is therefore a matter of hypothesis; but it is an hypothesis which is so far justified by the results as to have fully established its claim to a place among the laws of the science.

The nasal sonants (written *ṇ*, *ṇ̐*) are represented in Greek by *α*, *αν*, *αμ*, in Latin by *en*, *em*. They differ further from the liquid sonants in their origin. Liquid sonants, we have seen, are always due to the loss of an *e* in a syllable containing a liquid; nasal sonants are sometimes due to the same cause, but also result from the addition of a suffix beginning with a nasal to a stem ending with a consonant. We shall consider these two cases separately.

The Nasal Sonants.

How differing from liquid sonants.

As in illustrating the phenomena of liquid sonants in Greek and Latin, we shall take in sequence the different formations in which nasal sonants are to be found. Another method of arrangement could be pursued, viz. to classify the nasal sonants according as the syllable in which they occur is accented or unaccented. Thus,

In accented
and unac-
cented syl-
lables.

(1) The nasal sonant appears in an unaccented syllable before mutes, nasals, and liquids, and at the end of a word, e. g. :

ἐ-κατό-ν (ἐκῆτον)	Lat. <i>centum</i> .
μέ-μα-μεν (μεμῆμεν)	<i>memento</i> .
ὄνομ-α (ὄνομη)	<i>nomen</i> .

(2) In unaccented syllables before *ι*, e. g. :

I.-E. <i>gmiō</i>	βαμ-ιω = βαίνω	<i>venio</i> .
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(3) In accented syllables before a consonant, e. g. :

I.-E. <i>s-ḡ/i</i>	ἐσ-αντι = ἔασι.	<i>sunt</i> for <i>sent</i> .
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(4) Before sonants, where it becomes a transitional sound, e. g. :

I.-E. <i>tḡn-ú</i>	ταν-υ-	<i>tenuis</i> .
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In different
formations.
In thematic
aorist.

We have seen that the thematic aorist is regularly formed from the weak stem : e. g. from *λείπω* we have *ἔλιπον*. Similarly from the stem *πενθ-* in *πένθος* and *πέισομαι* for *πενθοσμαι* we should get *ἔπνθον*. But the three consonants together being unpronounceable, the nasal became sonant, and the result is *ἔπαθον*. In the same way *ἔχαδον* is for *ἐχῆδον*. The present *χανδάνω*, it is true, has the *α*-vowel ; but the future *χείσομαι* (σ. 17) for *χενδ-σμαι*, shows the *ε* of the full root, just as *πέισομαι* for *πενθ-σμαι*. So also *ἐλαχον* for *ἐλῆχον* points to a full root *✓λεγχ*, the *ο*-degree of which we get in *λέλογχα*.

The nasal sonant also probably appears in the so-called aorists *ἔσσευα*, *ἔχευα*. These forms are more probably imperfects, of which the original inflexion was **ἐχευῆ* for *ἐχέφη*, *ἐχευς*, *ἐχευ(τ)*. The plural and middle voice, as we have already seen, should show the reduced form of the root, and therefore we ought to have *ἐχυμεν*, *ἐχυτε*. These forms do not occur, as the *α* of the 1st pers. sing. has been extended throughout the tense, but the Homeric middle *χύτο* (Ψ. 385), etc., is quite regular.

Similarly, from a stem *κτεν-* in *κτείνω* we ought to get an aorist **έκτενα*, **έκτεν(τ)*, plural *έκτημεν* (*έκταμεν*), etc. But in this word the reverse process has taken place, and the weak stem *έκτᾱ-* for *έκτη-* has been extended to the singular in *έκτᾱν*, *έκτᾱ*. The middle forms in Homer, *κτάμεναι*, *κτάμενος*, *κτάσθαι*, *ἀπέκτατο*, also show the nasal sonant.

As in the aorist so in the perfect, the plural of the active and the whole of the passive voice is formed from the reduced verb-stem. Therefore from a stem *μεν-* in *μένος* we ought to get a perfect. In the perfect.

sing.	<i>μέμονα</i>	<i>μέμονας</i>	<i>μέμονε.</i>
plur.	<i>μεμημεν</i>	<i>μεμητε.</i>	

And these forms we find in the Homeric *μέμᾱμεν* and *μέμᾱτε*. Other forms are *μέμᾱτον* (Θ. 413), *μέμᾱσαν* (N. 337), *μεμᾱώς* (passim), but *μεμᾱός* (Π. 754) and *μεμᾱσι*.

Similarly, from *γεν-* in *γένος* we have the perfect *γέγονα*, plural *γέγαμεν* (*γεγημεν*), *έκγεγάτην* (κ. 138), infin. *γεγάμεν* (E. 248), and the partic. *γεγάώς*, which in the form *γεγώς* survives in Attic tragedy.

In *γεγάώς* it seems that *η* before *φ* has passed to *αν*, e.g. *γεγηφως* = *γεγανφως*, which, on the analogy of *έσταώς*, has passed to *γεγάώς*.

So also *γεγάσι* (for *γεγενήσι* = *γεγᾱσι*) has been assimilated to *γέγα·μεν*, *γέγα·τον* and become *γεγά·σι*. The explanation of *μεμᾱσι* is the same. A clear instance of analogous formation, parallel to *γεγάώς* is to be seen in Pindar's *γεγάκειν* (*Olymp.* 6. 49). The similarity of *γέγαμεν* (the plural with weak stem of *γέγονα*) to *έσταμεν* led to the assumption of a form *γέγάκα* on the analogy of *έστακα*. Such too is the probable history of *βέβᾱκα*.

In the perf. mid. we have *τέτᾱ-ται* = *τετῆ-ται*, with the root *τεν-* in *τείνω* (= *τεν·ιω*).

πέφᾱται = *πεφῆται*, root *φεν-*; cf. *φόνος*. Other forms are *πεφάσθαι*, *πέφανται*.

A stem *μενθ-* seems to be proved by *μενθήραι* (Hesych. *μενθήρη· φροντίς*). We shall hardly accept the derivation of the *Etymologicum Magnum*, which derives the words from *μένος* and *θηράομαι*, on the ground that the soul (= *μένος*) is hunted, i. e. governed, by thought. The reduced form of *μενθ-* perhaps appears in *ξμαθον* for *έ-μηθ-ον*. *ξμαθον* may however show the reduced form of the stem *μᾱθ-* in *έπιμᾱθής* (cf. De Sauss. p. 152).

Another stem ending in a full consonant is seen in *πεπαθῦα* (*πεπηθῦα*) beside *πέπονθα*: and probably in Γ. 99 we ought to read with Aristarchus *πέπασθε* (= *πεπαθ-τε*) for the vulgate *πέποσθε*. At the same time it is difficult to separate the stem *παθ-* from Lat. *pat-ior*, where the *a* must be primitive and cannot represent a nasal sonant.

In present
stems.

In verbs corresponding to the eighth class of the Hindu grammarians, where the pres. is formed by the addition of the suffix *-nu* to the reduced stem, we find nasal sonants in *τά-νν-ται* $\sqrt{\text{τεν}}$ - and *ᾶ-νν-ται*, Sk. *sanuté*, $\sqrt{\text{san}}$ (obtain). The original sibilant is represented by the aspirate of the Attic *ᾶ-νύ-ω* and of *αἰθ-έν-της*.

In nominal
stems.

The suffix *-to* takes the reduced form of the root. Hence we have—

	<i>τατός</i>	for	<i>τητός</i>	$\sqrt{\text{τεν}}$.
Sk. <i>matá</i>	(<i>αὐτό-</i>) <i>ματος</i>	for	<i>μητός</i>	$\sqrt{\text{μεν}}$.
<i>hatá</i>	(<i>όδυνη</i>) <i>φατός</i>	for	<i>φητός</i>	$\sqrt{\text{ghen-}}$.
<i>gatá</i>	<i>βατός</i>	for	<i>βητός</i>	$\sqrt{\text{gem}}$ (Lat. <i>venio</i>).
<i>ratá</i>	<i>ἐ-ρατός</i>	for	<i>ἐρ-ητός</i>	$\sqrt{\text{rem}}$.

βᾶτός may also show the weak form of $\sqrt{\text{βā}}$ in *ἔβᾶν*, but Sk. *gatá* can only come from *gṇ-*. *ἐ-ρατός*, with the common prothetic vowel before the liquid, may be identical with Lat. *lentus*. On the other hand the adverb *ἡρέμα* points to a $\sqrt{\text{rem}}$ rather than $\sqrt{\text{ren}}$, therefore *ἐρατός* is for *ἐρητός*.

The suffix *-ti* also takes the reduced root. So we get *τάσις* for *τησις*. *βάσις* is open to the same doubt as *βατός*. An amplified stem appears in *ἀνδρο-κτασί-η* (*κτῆσι-η*); full root in *κτείνω* (= *κτεν-ω*).

The termination *-ú* also was suffixed to the reduced form of the root. This enables us to connect *παχύς* (*πηχύς*) with the Latin *pinguis* (for *penguís*, *πηγύ-ís*), the *e* becoming *i* before *-ng*; cf. p. 191). The Sk. *bahú* shows that the original stem was *bhṛghú*, whence we get *bahú* by Grassmann's law (cf. p. 174). In this case the law must have come into operation before the separate existence of Latin, as an initial *bh* is ordinarily represented in Latin by *f*.

ἐ-λαχύς goes back to *ἐ-λghús*, the Indo-European *lṅghú-*,

and is identical with the Latin *levis* for *l̥h̥uis*, a Latin *eu* corresponding regularly to Indo-European *ŋh̥-*.

Similarly *βραχύς* is for *βρηχύς*, Lat. *brevīs* for *brenh̥uis*. The difference of *pīguis* and *brevīs* is due to the fact that the latter shows a velar, the former a palatal aspirated guttural.

So *δαρύς* (*δγρύς*) corresponds to *den-sus*, with a difference of termination. The same nasal sonant appears in *βαθύς* (*βγθύς*), the strong stem being seen in *βένθος* (also *βάθος*).

ensis is Sk. *así*, and is for *ŋs̥i-s*. The same stem may perhaps be seen in Gk. *ἄορ* = **ἄσορ* (*ŋs̥-ορ*)¹.

πάρος, beside the Sk. *pánthan*, gen. *pathás* (*πη-θήας*), seems to be for **πηγρος*. In Latin we have *pon(t)-s*, which ought to have had a gen. *pent-ís* (*πητ-ís*); cf. *πώς* **πεδός*.

The 1st pers. pron. plural seems to have come from an Indo-European *ŋsmé*, whence *ἄσμε* = *ἄμμε* (Aeolic), or by loss of spirant and compensatory lengthening, *ήμε-*, where the aspirate is on the analogy of *ύμείς* (Sk. *yuṣma*). In the German languages *ŋ* = *um*, and we get **ums(me)*, whence Gothic *uns*.

In the weak cases (cf. p. 291) of declension the *e* of the fuller form of the stem was dropped: before a vowel the nasal remained as a consonant, before a consonant it became a vowel. In suffixal syllables.

This is specially seen in stems with suffix *-men-*, e. g. stem *ποιμεν-*, with the weak form in *ποίμν-η*. The dative plural *ποιμέ-σι*, in which the initial letter of the termination is a consonant, has been assimilated to the form of the other cases. Originally it stood as *ποιμῆσι* = *ποιμᾶσι*.

φρήν, *φρεν-ός* with the *o*-degree in *σώφρων*, *σώφρονος*, should show in the dat. pl. *φρησι* = *φρασί*, as we find it in Pindar, rather than the Attic *φρε-σί*. The stem *προφρων-*, nom. masc. *πρόφρων*, has in the fem. *πρόφρασσα* for *προφρητια*, with which we may compare *Περσέφαρτα*, where we have the same root as in *πέ-φα-ται*, *-φα-τός*, etc.

The stem *έον-* has masc. *έών*, fem. *έασσα* for *έσητια*: cf. Lat. *ab-sens*.

¹ Another view is that *ἄορ* is for *ἄ-σφορθ*, Eng. *sword*.

In the nom. and acc. sing. of neuters in *-men*, the final *a* of Sk. *nāma*, Gk. *ὄνομα*, compared with Lat. *nomen*, gives proof of an original sonant. Originally this nasal would have become sonant only when the succeeding word began with a consonant. In *ὄνομα* and the stems similarly declined, *ἦπαρ-*, *ἰδαν-*, etc., the sonant nasal remains throughout, thanks to the presence of the dental suffix in the oblique cases.

Beside <i>nāma</i>	<i>ὄνομα</i>	we may set the nouns of number.
<i>saptá</i>	<i>ἑπτὰ</i>	septem.
<i>náva</i>	<i>ἐννέα</i>	novem.
<i>dúça</i>	<i>δέκα</i>	decem.

The extended *ὀνόμα-ρα* answers to Lat. *cognomen-ta*.

The Sanskrit grammarians give *saptan-*, *navan-*, etc., as the stems of these words, but of the congenital languages Latin and Lithuanian show the labial nasal, while Gothic has final *n*, according to the rule of that language which converts final *m* to *n*.

In the Germanic languages the labial nasal has passed to the dental, on the analogy of the ordinal numbers, where the labial *m* was naturally dentalized before *t*. E. g. *tenth*, *zehn-te*, and *ten*, *zehn*, in place of *tem*, *zehm*.

In Sanskrit the terminations of the ordinals from two to ten are *-tíya*, *-tha*, or *-ma*.

Taking the following—

<i>saptamá</i>	<i>ἑβδομος</i>	septimus.
<i>navamá</i>	<i>(ἐνα-τος)</i>	nonus for noumus.
<i>daçamá</i>	<i>(δέκα-τος)</i>	decimus.

Sanskrit shows the labial nasal in the termination, and these are the only numerals which show a nasal in the ending of the corresponding cardinals. Unless then some strange chance has differentiated the nasals of ordinal and cardinal numbers, we are justified in assuming the same labial nasal in both, and in taking *-a* rather than *-ma* as the derivative suffix of the ordinal (cf. De Sauss., pp. 30-32), e. g.—

<i>saptam-á</i>	<i>ἑβδομ-ος</i>	septim-us.
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The forms *ἔνα-ros*, *δέκα-ros*, and the *u* of *octavus* must be dealt with under the morphology of these words (pp. 319, 365).

Leaving inflexion for Composition and Derivation, we find that suffixes, which drop *e* before certain endings, also drop it when the theme of which they form part becomes the first member of a compound word. If the second member of the compound begins with a consonant, a sonant will show itself at the end of the first member of the compound. E.g. *ὄνομα-κλυτός*. But in Greek the rule was not faithfully obeyed, and we find such compounds as *ἄρρεν-ο-γόνος* on the analogy of the stems ending in *-o*. In Composition and Derivation.

The Greek theme *έν-*, for older *σεμ-*, appears in *ἄ-παξ* for *ση-παξ*, and *ἄπλοῦς* for *σηπλοῦς*. The same *ση-* is to be found in Latin *sim-plex*, *sim-ul*, *sem-el*, *sem-per*.

We can now pass on to the terminations which show instances of the nasal sonant. In these the *ε*, which has been expelled in the stems previously considered, has never existed at all. In terminations.

The rule is, that the nasal sonant bearing the accent becomes *-an-* and not *-a-* in Greek and Sanskrit.

Thus in the 3rd pl. the ending *-nti* added to a consonantal theme develops a sonant, and as this syllable originally bore the accent the sound is represented by *-an*. *-αντι* appears in Greek as *-ᾱσι*; e.g. in the Homeric *μεμᾶ-ᾱσι*, *γεγά-ᾱσι* (p. 107). Compare also *γεγράφ-ᾱσι*, *λελύκ-ᾱσι*, etc. An ending *-ᾱτι*, *-ᾱσι* appears in the perfects *ἔθώκᾱτι*, *πεφήνᾱσι*, and *λελόγχᾱσι* in the poets (cf. p. 379).

To the influence of accent may be due the *-an-*, Gk. *ᾱ*, of the present of the root *es*. Sk. *sánti*, Gk. *ἔασι*.

The accent as it exists in Greek affords of course no help to the solution of the question. In saying that the nasal sonant of the ending originally had the accent we refer to the position of the accent in the primitive language, to determine which Sanskrit is a better guide than Greek.

In the 3rd pl. of the perf. mid. we find *-αται* for *-γται* after a stem ending in a consonant in the following cases:—

τετράφαται, Theogn. 42 ; Plat. *Rep.* 533.
 τετρίφαται (-το), Hdt. 2. 93.
 μεμίχαται, Hdt. 1. 146.
 ειλίχαται, Hdt. 7. 76.
 ὀρωρέχαται (-το), Π. 834 ; Λ. 26.
 τετεύχαται (-το), Λ. 808.
 δειδέχαται (-το), Δ. 4 ; η. 72 ; δέχαται, M. 147.
 ἔρχαται (-το), ἐέρχατο, Π. 481.
 τετάχαται, Thuc. 3. 13.
 ἐσεσάχαται, Hdt. 7. 62.
 γεγραφαται, Inscr.
 κεκρύφαται, Hes. *Opp.* 386.
 ἐπώχατο, M. 350.
 τετάφαται, Hdt. 6. 103.
 ἀπικάτο, Hdt. 8. 6.

This list only includes stems with a guttural or labial consonant ; besides these there are the dental stems, e.g. ἀγωνίδαι, κεχωρίδαι, ἐσκευάδατο of Herodotus, and the Homeric ἐρηρέδαι and ἀκηχέδαι. The same endings, -αι, -ατο, also occur after a vowel, e.g. βεβλήαι, κέαι, εἵαι, πεφοβήατο, κεχολώατο, and in the optat. middle, as in the Homeric γενοίατο, πνθοίατο, λαξοίατο, ἀγοίατο, γευσάατο, δυναίατο, πευρώατο. The Attic tragedians also employ the same ending ; Soph. *Ai.* 842 ; *O. R.* 1274 ; *O. C.* 921 ; *El.* 211, etc.

Miscel-
 laneous
 instances.

The *a* of the acc. pl. and sing. after consonants arises from a nasal sonant, e.g. πόδας = ποδης and πόδα = ποδη. So in Latin *pedem* = *pedη*, *pedes* (acc. plur.) = *pedηs*.

Miscellaneous instances of nasal sonants are—

viginti for **vigenti* for *vi-knt-i*, Doric *ἑκατi*.

For the *o* of *ε-ἑκοσι* cf. p. 370. The soft guttural in Latin in the numbers from 20 to 90 is due to the nasal sonant, e.g. *septingenti* (*septmkyti*), where the hard guttural regularly becomes a soft between two sonants.

triens is for *tri-ns* ; cf. *τριás* (*τρης*), which has been assimilated to the stems in -δ.

The present partic. in Latin shows the sonant. The

original declension was e. g. *bhéront-*, *bhern̄tós* (cf. Sk. *bhāran*, *bhāratas*). The Greek has assimilated the strong form, the Latin the weak, throughout.

Finally, we have the most common instance of all in the negative prefix Gk. *a* (*av*), Lat. *en-* *in-*, Gothic *un-*. The *en-* becomes *in-* in Latin from the fact that it generally occurs in unaccented syllables. The *av* before vowels in Greek, where we should expect *v*, may come from the nasal sonant in accented syllables; compare the Sanskrit *ná*.

We have now to consider the case of an original combination, Double
sonants.
ll, *gr*, *nm*, *nn*.

Osthoff (*Z. G. d. P.* 421) holds that unaccented *m*, *n*, *l*, *r*, *i*, *u*, before vowels and after a short syllable, have the function of consonants, but that after a long syllable we have *ii*, *uu*, *nm*: *nn*, *ll*, *gr*, without reference to the position of the accent.

The double liquid sonants so produced are represented in Sanskrit by *ir*, *ur*, *il*, *ul*, though the quantity of the *i* and *u* seems to vary, in Greek by *op*, *ol*.

Thus πολύ	Sk. <i>purá</i> .	βόλεται	Sk. <i>guráte</i> (?)
Βορέας	<i>girí</i> .	τορέιν	<i>tiráti</i> .
πόλις	<i>purí</i> .	μολεῖν	<i>miláti</i> .
χολάς	<i>hirā</i> .	πορέιν	<i>pūráyati</i> .
βορά	<i>giráti</i> .	στορ-	<i>stiráti</i> .

But Sk. *ir*, *ur* answer to Gk. *ap*, *al* in

βαρύς	<i>gurú</i> .	παρά	<i>purá</i> .
πάρος	<i>purás</i> .		

Latin has *ar*, *al*, *or*, *ol*, answering to Sk. *ir*, *ur*—

haruspex	<i>hirá</i> .	orior	<i>īrte</i> .
mare	<i>mīra</i> .	corium	<i>cīra</i> .
parentes	<i>poróntes</i> .	vorare	<i>giráti</i> .
gravis	<i>gurú</i>	mola	<i>múlā</i> .
		storea	} <i>-stir</i> .
		torus	

The original nasals *nn*, *nm* are represented by Sk. *an*, *am*, Gk. *av*, *am*.

	<i>τηνυ</i>	Sk. <i>tanú</i>	Gk. <i>τανύ-</i>
just as	<i>grrú</i>	<i>gurú</i>	<i>βαρύ.</i>
and	<i>ἐβῆλον</i>		<i>ἐβαλον.</i>

Other instances with double nasals even in unaccented syllables (while usually *η, η̄* = *an, am* only in accented syllables) are—

<i>ἐτημον</i>	<i>ἐταμον,</i>
<i>χημαι</i>	<i>χαμαί.</i>

Compare *humi*, where the *u* is due to the following labial, but *e* survives in *hemones* and *Semo* = *Se-hemo*.

<i>λιμπηνω</i>	<i>λιμπάνω.</i>
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In *πίνω* there is only one nasal.

In *τέκταινα* for *τεκτηῖα*, *av* replaces *η* before *ι*, and we get *τεκταῖα*, which then by Epenthesis (cf. p. 197) becomes *τέκταινα*.

βαίνω = *βανιω* is from original *gh̥io*, where the labial has been dentalised before the semivowel; compare *κοινός* from *κομ-ις*, cf. Lat. *cum*: *καίνω* beside *καμών* points to original *καμνω*.

In Latin the double nasals are represented like the simple nasals by *en, em*—

<i>τηνυ</i>	<i>τανυ-</i>	<i>tenu-is.</i>
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Long
sonants.

The Latin representative of *gr, ḡ* is doubtful: *gula* may be for *gḡlá* (Osthoff, *Z. G. d. P.* p. 586).

The question of the long sonants is obviously connected in some way with that of the appearance of stems increased by the addition of an indeterminate *svarabhakti* vowel side by side with the simple stems.

Compare—

<i>γενε-τήρ</i>	beside <i>γνη-τός.</i>	<i>κάμα-τος</i>	beside <i>-κμᾶ-τός.</i>
<i>καλέ-σω</i>	<i>κλη-τός.</i>	<i>τέμα-χος</i>	<i>-τμᾶ-τός.</i>
<i>-βελε-της</i>	<i>βλη-τός</i>	<i>περά-σσαι</i>	<i>πρᾶ-τός.</i>
<i>τέρε-τρον</i>	<i>τρη-τός.</i>	<i>δάμα-σις</i>	<i>δμᾶ-τός.</i>
<i>σκελε-τός</i>	<i>σκλη-ρός.</i>	<i>κερά-σσαι</i>	<i>κρᾶ-τήρ.</i>
		<i>πελά-σσαι</i>	<i>πλᾶ-τίον.</i>
		<i>θάνα-τος</i>	<i>θνᾶ-τός.</i>
		<i>ἀ-τάλα-ντος</i>	<i>τλᾶ-τός.</i>

In these groups of words it would seem most probable that we have a double set of roots existing side by side—

(i) The ordinary root extended by the addition of a *svarabhakti* vowel (γενε-τήρ beside √γεν-).

(ii) A reduced root followed by a long vowel.

The loss of the root vowel is the same phenomenon that we have met with so often before, and originates from the same cause, viz. the place of the accent. With regard to the first class, the question whether we are to consider the *svarabhakti* vowel as an integral part of the root or a merely phonetic insertion is as yet undecided, but we may notice two points:—

(i) The quality of the *svarabhakti* vowel, in Greek at any rate, is determined mostly by that of the preceding vowel. We have γενε-τήρ, but θάνατος.

(ii) The quality of the *svarabhakti* vowel determines that of the long vowel in the corresponding stem. We have γνη-τός, but θνᾶτός.

The second class of forms, which exhibit a long vowel, originated from a long sonant $\bar{f}$, $\bar{g}$, $\bar{h}$, $\bar{q}$. For the theory of the long sonants we must refer to p. 475.

The long liquid sonants $\bar{r}$, $\bar{l}$ are represented in Sanskrit by Long $\bar{r}$, $\bar{l}$. In Greek they appear as $\rho\omega$, $\lambda\omega$, and also apparently as $ορ$, $ολ$. Latin has $r\bar{a}$, $\bar{l}\bar{a}$ where Greek has $\rho\omega$, $\lambda\omega$, but $\bar{a}r$, $\bar{a}l$ where Greek has $ορ$, $ολ$.

Thus—

Sk. $\bar{g}\bar{r}-\bar{n}\bar{a}$	$\beta\rho\omega\tau\acute{o}s$	$gr\bar{a}num.$
$\bar{p}\bar{u}rvy\bar{a}$	$\pi\rho\acute{\omega}\tau\acute{i}o{s}$	
$\bar{s}\bar{t}\bar{i}r\bar{n}\bar{a}$	$\sigma\rho\omega\tau\acute{o}s$	strātus { (Z. G. d. P. 437; De Sauss. 263, 265).
	(short $\bar{r}$ in $\sigma\rho\alpha\tau\acute{o}s$)	
$\bar{g}\bar{u}r\bar{t}\bar{a}$		$gr\bar{a}tus.$
$\bar{p}\bar{u}r\bar{n}\bar{a}$		$pl\bar{a}nus.$

Similarly, I.-E. $bh\bar{r}gt\acute{o}s = fr\bar{a}ctus$ (Z. G. d. P. 178); I.-E. $u\bar{r}d-i- = r\bar{a}dix$, English *root* (short sonant in $\rho\acute{\alpha}δαμνος$, Goth. *vaurts*, Engl. *wort*); I.-E. $k\bar{r}te\bar{i} = cr\bar{a}tes$ (short sonant in Goth. *haurds*, cf. Engl. *hurdle*); I.-E. $t\bar{l}\acute{o}s = (t)\bar{l}\bar{a}tus$ (Z. G.

d. P. 366; *K. Z.* xxv. 49), and so on. So *quārtus* may represent I.-E. *qtuṛtós* (*Z. G. d. P.* 435), with a metathesis of *rā* to *ār*.

On the other hand,

Sk. <i>ūrdhvā</i>	ὀρθός	arduus.
<i>dirghā</i>	δολιχός	largus (for <i>dlārgus</i> ?).

The full root may appear in ἐν-δελ-εχής.

<i>ūrgā</i>	ὀργή.	
<i>ḡrsā</i>	κόρση.	
<i>pūrtī</i>	πόρτις	pars.
<i>ūrṇā</i>	οὔλος for Φολνος.	
<i>kṛṣā-</i>	κολεκάνος	(cracentes).
<i>īrmā</i>		armus.
<i>kūrdati</i>		cardo.

The above is mainly the list given by De Saussure, but many of the cases quoted are very doubtful. We may, however, be pretty safe in asserting *ṛ, ḷ* to be represented in Greek by *ρω, λω*, in Latin by *rā, lā*.

Long nasal
sonants.

The long nasal sonants are more doubtful still, but Osthoff (*M. U.* iv, *Vorwort*, p. iv) sees *ṛi* in *βᾱ-θι, βῆ-την*, Sk. *gāta*, by the side of *ṛi* in *βᾱτην*, Sk. *gātā*. (Otherwise *K. Z.* xxvii. 606.) So Sk. *ālīs*, Gk. *νήσσα*, may come from I.-E. *ṛli-* (Lat. *anas* is obscure). Sk. *yātar-* may be for *iṇṭer-* (cf. *εινατέρες, janitrices*). The long nasal sonant has also been seen in Gk. *vā-, vḡ-*, of *νη-κερδής*, etc. (*K. Z.* xxvii. 606). But none of this can be considered certain.

CHAPTER VI.

GUTTURALS.

EXPLOSIVE letters may be classified either according to the place in the mouth at which they are articulated, or according to the mode of their articulation. Their characteristic as a group is the voiceless moment or check in their pronunciation. Mutes or
Explosives.

According to place of articulation they can be divided into labial, dental, palatal, and velar sounds. The labials are pronounced at the lips, the dentals at the teeth, the palatals at the hard palate, the velars at the velum or soft palate. The last two divisions may also be grouped together as gutturals, but this term is more properly applied to certain consonants of the Semitic languages, and, as the sounds known as palatals are distinct in origin and treatment from those known as velars, it is better to give each class its proper name. The difference in mode of articulation may be illustrated by the English '*kin*' and '*cool*,' in the former of which the guttural is pronounced nearer the front of the mouth than in the second.

According to the manner of articulation the Explosives can be classed as Aspirated Tenués and Mediae and Unaspirated Tenués and Mediae. The Tenués, being pronounced with the vocal chords wide apart, have no accompanying vocal sound and are also called Surds. The Mediae, being pronounced with the chords close together, have an accompanying sound and are also called Sonant.

The following table shows the notation adopted for the different explosives in this book :—

	Labial.	Dental.	Palatal.	Velar.
Tenues . . .	<i>p</i>	<i>t</i>	<i>ġ</i>	<i>q</i> .
Mediae . . .	<i>b</i>	<i>d</i>	<i>ĝ</i>	<i>g</i> .
Tenues Asp. .	<i>ph</i>	<i>th</i>	<i>ġh</i>	<i>qh</i> .
Mediae Asp. .	<i>bh</i>	<i>dh</i>	<i>ĝh</i>	<i>gh</i> .

The distinction between palatals and velars.

The distinction between palatals and velars is comparatively recent and of great importance in the history of modern philology.

That the Sanskrit gutturals correspond in the majority of cases to gutturals in Greek and Latin has long been a familiar fact. But there have always been a certain number of words in which a Sanskrit guttural was known to be represented by a Greek labial or dental, while the Latin preserved the guttural, but sometimes as *c*, sometimes as *qu*. Philologists have never ventured to separate Sanskrit *ca*, Greek *τε*, Latin *que*; or Sanskrit *kātaras*, Greek *πότερος*, Latin *uter* (for *quoter*?); or again Zend *cis*, Greek *ρίς*, Latin *quis*. No adequate explanation however has been given by the older school of philologists of the circumstances under which the guttural was thus modified in the different languages. Curtius, in the first edition of his *Grundzüge*, did indeed distinguish these irregular phenomena by the names of labialisation and dentalisation, but such names are not in themselves a sufficient explanation. It was manifest that the guttural did become a labial or a dental, but to the question under what circumstances the change took place Curtius offered no answer. The explanation that he gave of the phonetic difficulty was that the change was produced under the influence of a parasitic *yod* and *v* sound; but it is clear that what is sporadic and parasitic cannot be grouped under a general law¹.

¹ It must be added that the remarks in Curtius *G. E.* 479, especially that 'the transformation worked by zetacism (dentalisation) is usually brought about by the influence of neighbouring *i* and *e* sounds' is very near the truth, and in the 5th German edition, Curtius acquiesces in the theory of Ascoli, etc., on this point.

The great discovery which has set the phenomena in an entirely new light was originated by Ascoli (*Corsi di fonologia*, p. 42 n.) and elaborated by Collitz (*B. B.* iii. 177), De Saussure (*Mem. Soc. Ling.* iii. 369), and especially Johannes Schmidt (*K. Z.* xxv. 63). To clearly understand it, it is necessary to go back to the Sanskrit.

Sanskrit once contained the following distinct series of gutturals¹, using the term, that is, in its looser sense.

	Hard.	Soft.	Aspirated.
I. . . .	ç . . .	j . . .	jh(h).
II. . . .	k . . .	g . . .	gh.
III. . . .	c . . .	j . . .	jh(h).

Thus we have—

- I. Palatals: ç, j, jh(h) (of which ç is called in Sanskrit grammars a palatal sibilant, while j, jh have no special name to distinguish them from the palatalised velars).

¹ The letters in series II. and III. are called by Whitney (*Sk. Gr.* § 5) respectively 'gutturals' and 'palatals'; but the 'palatals' are recognised as derivative and originating in an alteration of the 'gutturals' (§ 42), i. e. as we shall see, they represent the 'gutturals' before palatal vowels.

ç has come to be a palatal sibilant and is pronounced as 'sh' (§ 63); but according to the theory now generally adopted it represents an original guttural, though one distinct in kind from those in series II.

j and, in theory, jh (which however actually occurs as h, § 220), represent under the same symbol two distinct sets of sound; first, the soft aspirated and unaspirated 'palatals,' corresponding to the 'gutturals' g, gh, just as c corresponds to k; secondly, the soft aspirated and unaspirated sounds corresponding to ç (§ 219).

Some obscurity is unavoidable for two reasons. First, the Sanskrit alphabet has but one set of symbols for two sets of sounds totally distinct in origin. Secondly, the symbols in series III. (c, j, jh) are unfortunately known in Sanskrit grammars as 'palatals,' while on the other hand the series ç, j, jh are called by German philologists 'palatals,' as distinct from the 'velars' k, g, gh.

We have not ventured to introduce any new terminology into a science already overweighted with technical terms, nor have we thought it well to fill our pages with illustrations from Zend and Church Slavonic, which distinguish the soft and aspirated palatals from the corresponding palatalised velars by a special symbol. But it is to be regretted that a subject which is in itself one of the most difficult in comparative philology should be further obscured by an ambiguous nomenclature.

II. Velars: *k, g, gh* (called in Sanskrit grammars 'gutturals').

III. Palatalised Velars: *c, j, jh (h)* (called in Sanskrit grammars 'palatals').

Now the sounds in Series I, *ç, j, jh*, are uniformly represented in Greek and Latin *under all circumstances* by *κ, γ, χ*: *c, g, gh*, or equivalent sounds.

The sounds in Series II, *k, g, gh*, and Series III, *c, j, jh*, regularly interchange with one another in Sanskrit, the latter taking the place of the former before *i (y)*.

Thus we have:—

✓ <i>çuc</i> (gleam)	<i>çuk-rá</i> (bright)	but <i>çóc-iṣṭha</i> .
✓ <i>vaj</i> (be strong)	<i>ug-rá</i> (mighty)	but <i>ój-īja-</i> .
✓ <i>arc</i> (shine)	<i>ark-á</i> (sun)	but <i>arc-ís</i> .
✓ <i>tij</i> (be sharp)	<i>tig-má</i> (sharp)	but <i>téj-iṣṭha</i> .

Now *i (y)* is the palatal vowel, and the explanation of these phenomena clearly is that the original guttural before the palatal vowel is under its influence pronounced not as a pure guttural, but with a palatal affection.

But this interchange between *k, g, gh*, and *c, j, jh*, occurs in Sanskrit not merely before *i (y)*, but also in some cases before *a*. For instance we have—

✓ <i>vac</i> (to speak)	<i>vāk-á</i>	but <i>vác-as</i> .
	<i>katarás</i> (which of two)	but <i>ca</i> (and).
✓ <i>yug</i> (to yoke)	<i>yúg-van</i>	but <i>yójate</i> .
	<i>gharmás</i> (warm)	but <i>húras</i> (warmth).

Sk. *a* and
Europ. *e*.

In nearly every case however this *a* before which the change takes place corresponds not to an *a* but to an *e* in Greek and Latin. For instance *vácas* corresponds to the Greek stem *ἐνεσ-*, *ca* to *τε*, *húras* (with *h* for *jh*) to *θερεσ-*.

What is the inference? Clearly that the Sanskrit *a* which corresponds to an European *e* is not identical in origin with the Sanskrit *a* which corresponds to an European *a*; but that the two sounds *a* and *e* originally different have become confused and identical in sound and character in Sanskrit, while they have remained distinct in the western languages. But

traces of the original existence in Sanskrit of this second palatal vowel are preserved in the palatalisation of the gutturals before those *a*'s which represent an original *e*, while before those *a*'s which are original the guttural remains intact. Indo-European *a* and *e* were only confused in Sanskrit *after* the latter had palatalised the preceding consonant.

We have now sufficiently established the following facts: ^{Conclusions.} that there were originally in Sanskrit two sets of gutturals:—

(1) The Palatals, *ç, j, jh (h)*, whose character is unaffected ^{Palatals.} by the succeeding sound.

(2) The Velars, *k, g, gh*, which before the palatal vowels ^{Velars.} *i (y)* and *a* corresponding to an original *e*, passed into the corresponding palatalised sounds *c, j, jh (h)*.

Now this double row of gutturals existed in the original Indo-European language. This we should hardly be justified in assuming from the evidence of Sanskrit alone, but it is conclusively proved by the phenomena not merely of Latin and Greek, but also of the North-European and of the other Arian languages.

Without discussing this further for the present, we may lay down the following laws. The original Indo-European language possessed two sets of gutturals—

(1) The Velar gutturals, *q, g, gh*, which, under the influence of ^{Velars.} succeeding sounds, took different forms in different languages. We may divide the Indo-European languages into two groups, according to the way in which they represented these sounds.

On the one hand, in Greek, Latin, and German, *q, g, gh* ^{Languages of West.} continually appear as *k*-sounds, or their equivalents, with a succeeding labialisation *u*, e. g. I.-E. *qis*, Lat. *quis*. We are not to regard this *u* as a 'parasitic' sound, but rather to suppose that the labialised guttural was originally a simple sound, differing, that is, from the complex sound produced by the addition of the semivowel *u* to the palatal guttural *k̂*, as in *ek̂-uos*, Sk. *áç-va*, *ik̂-Fos*, *eq-uos*. Still it must be admitted that

the languages of this group are not consistent in exhibiting the labial affection in all cases; frequently the labialisation appears in one language and not in the rest, or in one word but not in another in the same language, and under apparently the same circumstances.

Languages
of East.

On the other hand, in the Eastern and Slavonic languages, with which, apart from Sanskrit, we are not concerned, the η as an inherited affection is entirely absent; but it is not possible to say whether these languages never possessed the sound or whether they let it drop in pre-historic times.

The Velar gutturals then are represented in the different languages as follows:—

Velars in
Sanskrit;

In Sanskrit by k, g, gh , but before $i(y)$ and $a(=e)$, by the corresponding palatalised gutturals $c, j, jh(h)$. In neither case is there any trace of labialisation.

in Greek.

In Greek the velars appear either with a labial affection or without. Without it (when we write them q, g, gh) they are κ, γ, χ : with it (k^*, g^*, gh^*) they become before ι, ϵ the corresponding dentals τ, δ, θ : before o , nasals, liquids, τ, θ, s , the corresponding labials π, β, ϕ .

Where η precedes or follows the velar, they are represented by κ, γ, χ .

In Latin without labialisation the velars become c, g, gh (g or h); with labialisation k^* becomes qu or c ; g^* becomes gu, g or v ; gh^* becomes f, b, gu or v .

The following table gives the various representatives:—

Indo-European.	Greek.	Latin.	Sanskrit.
q . . .	κ . . .	c . . .	} k, c .
k^* . . .	κ, π, τ . .	c, qu . . .	
g . . .	γ . . .	g . . .	} g, j .
g^* . . .	γ, β, δ . .	gu, v, g . .	
gh . . .	χ . . .	g, h . . .	} $gh, jh(h)$.
gh^* . . .	χ, ϕ, θ . .	f, b, gu, v . .	

Palatals.

(2) The Palatal gutturals, $\hat{k}, \hat{g}, \hat{gh}$, appear in Latin, Greek, and the Teutonic languages as mutes, but in the Slavonic and

Eastern languages, including Sanskrit, as spirant sounds. This difference of treatment may perhaps reflect an original difference of dialect in the parent speech.

The following is a table :—

Indo-European.	Greek.	Latin.	Sanskrit.
$\hat{k}$. . .	κ . . .	c . . .	ϕ .
$\hat{g}$. . .	γ . . .	g . . .	j .
gh . . .	χ . . .	h, g . . .	h .

Curtius explained the transformation of gutturals to labials and dentals by supposing that the gutturals developed after them a 'parasitic' or 'sporadic' semivowel μ or $\dot{\imath}$; just as we have the palatal guttural followed by μ in $\dot{\epsilon}\hat{k}\mu\sigma$, Lat. *eq-uos*, where it is indistinguishable from the simple labialised velar in *qo*=Latin *quo*. But the later theory differs from that of Curtius in supposing two originally distinct sets of gutturals, and not one set modified or not as the case might be by a sporadic $\dot{\imath}$ or μ . As has been stated above, however, this μ sound is not always constant. We are to regard it as an original part of the velar sound, but we must yet admit that the conditions under which it sometimes appears and sometimes does not, are not yet completely known. For the Indo-European q we get normally Latin *qu*, Gothic *hw*: but, on the other hand, there are cases where the labial semivowel has completely disappeared, and where we have to enquire whether a Greek κ or Latin c corresponds in Sanskrit to a k or a ϕ before we can decide to which order of gutturals it belongs. Practically then it is necessary to distinguish between those cases where the velar is labialised by a succeeding μ -sound (which we shall write k^* , g^* , gh^*), and those cases where it is not, (q , g , gh). We shall proceed to illustrate the theory under each of these six heads.

I. Indo-European q (the unlabialised hard velar) is in Sanskrit k , Greek κ , Latin c before a , r , l . Indo-European.

(Where the Sanskrit is not given, the character of the sound

is determined by other languages—Zend, Lithuanian, Church Slavonic, etc.)

Sanskrit.	Greek.	Latin.
<i>kákhati</i> (he laughs)	καχάζειν κολώνη καμάρα κάπρος	cachinnus. collis, excello. camurus. caper.
<i>kṛpānas</i> (sword)	καρπός	carpo.
✓ <i>kṛ</i> (mention)	κᾶρυξ	car-men.
<i>karkūtas</i> (crab)	καρκίνος κάπετος, σκάπτω κλάζω, κλαγγή κληίς	cancer (for carcer). scobs, scabo. cla-n-go. { clavis, conclave, claudio.
	κρώζω	crocio, glectore.
<i>tarkús</i> (spindle)	{ ἄτρακτος, τρέπω ἀτρεκής, τερπικέ- ραυνος	{ torqueo.

There is labialisation in τρέπω, *torqueo*, and in the derivative τερπικέραυνος.

	ἄκαρον (blind, Hesych.)	aquilus, aquilo, aquila.
<i>kapís</i> (incense)	{ καπύω, καπνός, κε- καφηώς	{ vapor (?).
✓ <i>kṛt</i> (to spin)	κάρταλον, κλώθω (ῥ)	crātes (ῑ).

We find the short liquid sonant in Gothic *haurds*, English *hurdle*.

<i>kalamas</i> (writing-reed)	{ κάλαμος	calamus, culmus.
✓ <i>kṛt</i> (to cut)	κείρω	curtus (<i>kṛt</i> -).
✓ <i>kūrd</i> (to leap)	κράδη σκαίρω	cardo. scurra.
✓ <i>sku</i> (to cover)	σκῦτος	scutum.

We may perhaps compare *obscurus* and *σκιδ*.

	κράνος	cornus (<i>kṛno</i> -).
✓ <i>kṣi</i> (to possess)	{ κτίζω, εὐκτίζμενος, ἀμφικτίονες, κτίλος	quies, tranquillus; cf. Eng. <i>while</i> .

In Latin we have in this instance labialisation.

Sanskrit.	Greek.	Latin.
<i>añkās</i> (hook)	ἄγκων, ὄγκος	uncus.
<i>çarkarā</i> (flint)	κρόκη, κροκάλη	calx, calculus.
✓ <i>rakṣ</i> (to protect)	ἀρκέω, ἀλκή, ἀλέξω	arceo.
<i>tákman</i> (child)	τέκνον	Eng. <i>thane</i> .
<i>takṣan</i> (carpenter)	τέκτων	tignum.

In some of the above instances an original *q* appears unlabialised before letters other than *a*, *r*, *l*, though with a following *a*, *r*, *l* in some connected form. The following are more irregular cases of the absence of labialisation :—

<i>kālas</i> (black)	κηλís (κᾱλís)	caligo.
<i>kárakas</i> (cocoa-nut shell)	κάρνον	carina.
<i>kēsara</i> (hair)	{ καίρος (thread of warp, Hesych.) }	caesaries.
✓ <i>kamp</i> (to tremble)	{ κάμπτω }	campus.
<i>karkaras</i> (hard)	κάρχαρος.	
<i>kalyás</i> (sound)	καλός (Ep. κᾱλός)	Eng. <i>hale</i> .
<i>kanyā</i> (girl)	καινή.	
✓ <i>kr̥, kr̥iṓti</i> (to do, make)	{ κραίνω, κέρδος ναύ-κράρος }	create, Ceres.
<i>kravís, krūrás</i> (raw flesh)	{ κρέας, κρύος κρυόεις κρύσταλλος }	cruor, crudus. crudelis, cruentus.
✓ <i>kaṣ</i> (scratch)	{ κάστωρ. }	
<i>kaṣatī</i>	{ καλύππω, καλύβη κύλιξ, κάλυξ }	{ oculo, clupeus. culullus, calix.

In this group there are traces of labialisation; *occulo* is for **obquelo*, with *el*=*ol* before a vowel, and *quol* written *cul*. In the *S. C. de Bacchanal.* we get *eqwoltōd*, which preserves the labialisation.

	καλεῖν	calare, kalendae.
✓ <i>kal</i> (to drive)	κλονεῖν (for κολ-νεῖν)	pro-cella.

Sanskrit.

Greek.

Latin.

κλάω

clā-des, culter, clava.

culter is for *ql̥tr* : *clādes*, *clāva* from *ql̥*.

Gladius, if not a foreign word of Celtic origin, may be connected, the *c* being softened to *g* before the liquid, as in *gracilis*.

✓*kr*, *kir* (scatter)

kirāti

} κρίνειν

cerno.

In Sanskrit one or two late forms show *sk* (Whitney, *Supplement*, p. 22).

kr̥śas (slim)

{ κολεκάνος, κολοκάνος *gracilis*.

(Hesych.), κολοσσός Old Lat. *cracentes*.

✓*skhal* (stumble)

σκολιός

scelus.

kañkanī (orna-
ment with
bells)

} κανάζω

cano.

✓*skand* (leap)

σκανδαλον

scando.

✓*kṣad* (divide)

σχάζω

scandula.

κολάπτω, κόλαφος,

σκάλοψ, σπάλαξ,

σπαράσσω

} scalpo.

The *o* of *κόλαφος*, etc. is irrational ; *σπάλαξ*, *σπαράσσω* show labialisation from the allied forms.

The Ionic pronominal stem *κο-* in *κῶς*, *κοῦ*, etc., as opposed to *πῶς*, *ποῦ*, *quo*, *quot*, etc., shows a dialectical peculiarity, so far unexplained. But the whole group of words from this root presents difficulties not yet fully cleared up ; *uter*, e. g. can hardly be separated from *πότερος*, yet cannot by the laws of Latin phonetics stand for **quoter* or **cuter*.

Again with an original *q* we have—

κόμη

coma.

κορώνη

corona.

κοτύλη

(catinus ?).

κόρη, κούρη, κουρίδιος (curtus ?).

Cf. *κουρίς*, *κόρη*. According to Curt. (*Stud.* i. 250, *G. E.* 148) to be connected with *κείρω*, because maidens before marriage dedicated their hair to the goddesses (v. Ebeling, *Lex. Hom.* s. v.).

κώδεια

cauda.

kāraṇas (crow ?)

κόραξ, κορώνη

corvus, cornix.

Sanskrit.	Greek.	Latin.
<i>kānas</i> (flour-dust)	κόνις	cinis.
✓ <i>kal kaláyati</i> (to urge on)	κέλης	celer, celox.
<i>kōkilas</i> (cuckoo)	κόκκυξ	cucus.
<i>kanthā</i> (garment)	κέντρων, κόντος	cento.
<i>kavís</i> (wise)	κοέω, ἀ-κού-ω	cavere.

Here an initial *s* is lost ; cf. Ger. *schauen*, Eng. *show*, and Gr. *θυο-σκόος*.

A labialised *q* (*kʰ*) is represented in Greek by *κ*, in Latin by *c*, if *u* follows or precedes—

vrkas (wolf) λύκος (*Flukʰos*).

The Latin *lupus*, owing to its *p*, must be borrowed from the Italian dialects ; Goth. *vulfs*, Eng. *wolf*.

nákṭi (night) νυκτ-ός cf. noct-is.

cakrás (wheel) κύκλος (*kʰekʰlo-s*).

Cf. Ang.-Sax. *hweohl*, *hweohol*, Eng. *wheel*.

✓*ruc* (to shine) λευκός lucet.

rugá, rōgas (sickness) λυγρός, λευγαλέος lugeo.

yugam ζυγόν jugum.

✓*muc, muñcati* (re-lease) μυκτήρ mucus.

ōkas (repose) εὔκ-αλος.

Hence βουκόλος, but οιοπόλος, αἰπόλος, etc. (cf. De Sauss. *Mém. Soc. Ling.* vi. 161.)

We may add σκύτος, κύλιξ, which appear above.

II. The velar *q* with the subsequent labialisation (*kʰ*) becomes in Greek before the thin vowels *ι ε*, the corresponding dental *τ*. Before similar vowels in Sanskrit it becomes the palatal *c*. But between Sanskrit *c* and Greek *τ* there is no immediate historical connexion. The dental only appears in Greek in those cases where other words of the same group show a *π* before the full vowel *ο*, e. g. τέλλω : πόλος, τέο : πόθεν (v. infra). We must distinguish between the cases where the velar is labialised (*kʰ + e*), and those in which it is not (*q + e*). In the former case we have in Sanskrit the palatal *c*, but in Greek and Latin *τ, qu* (e. g. *cis*, *τίς*, *quis*, Indo-European *kʰis*). In the latter case we have in San-

The velar
in combi-
nation with
u.

The labia-
lised hard
velar.

In the following instances we get τ before ι , ϵ , but π before o , etc. in connected words in Greek.

Sanakrit.	Greek.	Latin.
(i) <i>ci</i>	$\tau\acute{\iota}\varsigma$, Ion. $\tau\acute{\epsilon}o$, etc.	quis.
(ii) <i>kátara</i>	$\left\{ \begin{array}{l} \pi\acute{o}\tau\epsilon\rho o s, \pi\acute{o}\varsigma, \pi\acute{o}\upsilon, \\ \pi\acute{o}\iota, \pi\acute{o}\theta\epsilon\nu \end{array} \right\}$	uter (for quoter?).
(i) <i>pāñca</i>	$\pi\acute{\epsilon}\nu\tau\epsilon$	quinque.
(ii) <i>panktí</i>	$\left\{ \begin{array}{l} \pi\acute{\epsilon}\mu\pi\tau o s, \pi\epsilon\mu\pi\acute{\alpha}\varsigma \\ (\pi\epsilon\mu\pi\eta\varsigma). \end{array} \right\}$	

Lesbian $\pi\acute{\epsilon}\mu\pi\epsilon$ has the consonant from the ordinal.

(i) <i>sácya</i>	$\acute{\alpha}$ -οσσητήρ, ξταιρος	sequor.
(ii) <i>sākām</i>	ἐπομαι, ὀπ-άουες	socius.

The common root is sek^h , soh^h (*K. Z.* xxv. 145).

(i) <i>catvāras</i>	$\tau\acute{\epsilon}\tau\alpha\rho\epsilon\varsigma$	quattuor.
(ii) <i>turīya</i> for $*kturīya$ $\tau\rho\acute{\alpha}\pi\epsilon\zeta\alpha$ $\sqrt{pac}$ (cook).		quartus (for $q^t u r i \acute{o} s$).
(i) <i>pácyatē</i> (he cooks)	$\pi\acute{\epsilon}\sigma\sigma\omega$ (= $\pi\epsilon\kappa^h\iota\omega$)	coquo.
(ii) <i>pákti</i> , derivative $\sqrt{vac}$ (speak).	$\pi\epsilon\pi\tau\acute{o}\varsigma$, $\pi\acute{o}\pi\alpha\nu\omicron\nu$.	
(i) <i>vácya</i> (voice)	$\delta\sigma\sigma\alpha$	vox.
(ii) <i>vāk-á</i> $\sqrt{ci}$, $cāy$ (observe).	$\delta\psi$.	
(i) <i>cáyati</i>	Arcad. $\tau\epsilon\acute{\iota}\omega$.	
(ii) Zend <i>kaēna</i>	$\pi\omicron\iota\nu\etá$.	

For the connexion of these two cf. ψ . 312 $\delta\pi\epsilon\rho\acute{\iota}\sigma\alpha\tau\omicron$ $\pi\omicron\iota\nu\etá\nu$ and Hdt. 3. 14 $\pi\omicron\iota\nu\etá\nu$ $\tau\acute{\iota}\sigma\omicron\nu\tau\epsilon\varsigma$. The Latin *poena* will in this case be borrowed. It has been suggested to connect Latin *quaero* (= $k^h a i - r o$), but cf. p. 140.

(i) Zend <i>ashī</i>	$\left\{ \begin{array}{l} \tau\rho\iota\sigma\tau\acute{\iota}\varsigma, \delta\sigma\sigma\epsilon, \\ \delta\sigma\sigma\omicron\mu\alpha\iota, \\ \delta\psi\omicron\mu\alpha\iota, \delta\mu\mu\alpha, \\ \delta\pi\omega\pi\alpha, \delta\pi\etá. \end{array} \right\}$	oculus.
(ii)		

$\tau\rho\iota\sigma\tau\acute{\iota}\varsigma$ in Hesychius is the result of confusion with $\delta\pi\etá$.

$\sqrt{car}$ (move).

(ii) Sanskrit <i>cáratī</i>	$\tau\acute{\epsilon}\lambda\lambda\omega$	colo.
(ii)	$\left\{ \begin{array}{l} \pi\acute{o}\lambda o s, \pi\omega\lambda\acute{\epsilon}\omega, \\ \xi - \pi\lambda - \epsilon\tau o. \end{array} \right\}$	

K

With regard to the question of orthography, it is to be noticed that the original Greek alphabet contained a second hard guttural, Ϟ, or *koppa*, which appears in inscriptions mainly before *o*, *υ*, *ρ*, *λ*. Thus we find *Ϟορινθόθεν*, *Ϟύρνος*, *ΛοϞρός*, *ΠάτροϞλος*, but only rarely forms like *ΕϞωρ*. Though the letter early disappeared from the Greek alphabet, yet it seems originally, as opposed to *κ*, to have represented the velar; and in this character it was introduced into the Latin alphabet as *Q*, and there became permanent.

Q passed into the Latin alphabet, but not into the Oscan and Umbrian, probably from the Chalcidian alphabet of Cumæ (Mommson, i. 213, 217). It is found before the consonantal *u* and before *o*, e.g. the Ambrosian MS. of Plautus is said to read *qolunt* in *Pseud.* 822. But from the earliest times we find a confusion arising between *qo*, the graphic representative of *k̂o*, and *quo*, representing *go*, *k̂o*; e.g. **gom* (*k̂om*, the preposition *cum*) is confused with *quom* (the adverb, *k̂om*, *gom*). In fact *q* comes to be used to represent the hard guttural, whether velar or palatal, before *u* and *o*; so we get *pegunia* (beside *pecus*, Sk. *paçu*), *quogirca*, etc., where *q*, *qu* represents simply *c*.

In the Augustan age *quo* became *cu*, perhaps originally before final consonants in *cum*, *cur*. Any further change, however, may be the result of analogy. For

quoius became *cuius* because of *huius*.

quoi *cui* *hui-c.*

quom *cum* *tum.*

But *quorum* remains, because of *horum*.

quoniam remains, because **tuniam* did not exist.

Outside the relative we have *ecus*, *hircus*, *aecus*, *inicus*, *propincus*, *posticus*, before final consonants, but always *reliquos*, *pedisequos* (*relicus* is late), perhaps because the termination is originally *-omos*, not merely *-os* (cf. Ribbeck *ad Georg.* 4. 172; *Aen.* 8. 450). An initial *que-* passes into *co-*, except before *r*; e.g. *colo* for *quelo*, but *quercus*, *querquerus*, etc.

The palatal *k̂* is represented in Sanskrit by *ç*, in Greek by *κ*, The hard palatal *k̂*.
in Latin by *c*, irrespective of the subsequent sound.

Sanskrit.	Greek.	Latin.
√ <i>ṣaṇs</i> (praise), <i>ṣāṇ-</i> <i>sati</i> (he praises) }	ἐγ-κώμιον	Camena, Camillus.

In spite of the form *Camena*, *Camillos* in Festus, it is doubtful whether we can connect *carmen* (as though for **casmen*), as in the combination *-em-s* vanishes, e.g. *dusmo* (Paul. Fest. 67) = *dumus*, *prismo* (Corfinium) = *primus*, *dismota* (Sc. de Bacch.) = *dīmota*. So **casmen* should become **cāmen*.

κέϊνος, κῆνος	hi-c, si-c, tun-c, nun-c.
κέϊθεν, καί	cis, citra, cēdo, cēteri.

Cēteri seems parallel to *κέϊθεν* : *c-i-s*, *c-i-tra* may show the weakest root, *i* being merely an euphonic insertion.

√*ṣar*, *ṣal* (cover)

ṣālā (house)	κλίσιον, καλιά	{ celare, cella, clam, color, cucullus.
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καλιά, *cucullus*, perhaps *color*, show the reduced root √*k̄l̄*, *clām* may be for *k̄l̄m*. *Celo* may be explained as the result of the same confusion of the *ē*- and *ā*-Ablauts that we get in *cēdo*, *cādo*; *sica* (for *sēca*), *saxum*, etc. (p. 249); *super-cilium* may be put here, or else cf. κύλα, κυλοῖδάω.

ṣirā (for <i>ṣṛrā</i>)	κάρα, κάρηνα	cerebrum, cervix.
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For this group of words cf. p. 302.

ṣatām	ἐκατόν	centum.
√ <i>ṣri</i> , <i>ṣṛ</i> (resort), <i>ṣrāyati</i> }	κλίνειν, κλιτύς	{ in-clinare, clivus, clitellae, Clitumnus.
	κέρας, κριός	cornu, cervus.
√ <i>ṣru</i> , <i>ṣrāva</i> (re- nown) }	κλέφος, κλύω	cluere, gloria.

Gloria is for *clēyeria* which becomes *clōyeria*, and the hard guttural passes into the soft before *l* as in *cracentes* : *gracilis*.

ṣrōṇi (hip)	{ κλόνιον, κλόνης (= κλοφνις). }	clunus.
ḥṛd (heart)	καρδία	cord-is.

The initial *h* of Sk. is not original (Whitney, *Sk. Gr.* § 66). Wharton, (*Etyma Graeca*) compares *ṣrad-dhā*.

ṣānas (grind- stone)	{ κῶνος	cos, catus, cuneus.
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Catus is for *cotus* (cf. *satus* = *satus*); *cautes* from the same root ought not to have the diphthong; cf. *cotibus* (Verg. *Ecl.* 8. 43); *cūneus* for **cōneus* before the nasal.

ṣarkara (flint)	κρόκη, κροκάλη	calx, calculus.
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Sanskrit.	Greek.	Latin.
✓ <i>ṣad</i> (fall)	κέκᾶδον	{ cādere, cēdere, cassus, cadaver, cessare.

We can hardly connect *calamitas* (Old Lat. *cad-amitas*) because of *incolumis*.

<i>ṣākuna</i> (bird)	κύκνος	ciconia.
The <i>v</i> in κύκνος is due to the guttural.		
<i>ṣāṅkhā</i> (cockle)	κόγχη	congius.
✓ <i>ṣāṅk</i> , <i>ṣāṅkate</i> (doubt)	{ ὄ-κν-ος	cunctari.

✓ <i>ṣi</i> (lie) <i>ṣéte</i>	{ κολη κείμαι ἐγκυλί	cunae (coenae). civis (ceivis). cutis.
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✓ <i>ṣū</i> , <i>ṣvā</i> , <i>ṣvi</i> (to swell)	{ ἐγ-κυέω, κῦμα, κόλλος	cumulus, cavus, caulis.
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inciens = *inciens*, cf. *sto* for *ῥῖο* (φυῖω).

κίκυς	queo (<i>kū</i>).
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In this instance *k* + *μ* is indistinguishable in Latin from *kʷ*, but the sound is proved by the allied languages to be palatal.

<i>ṣvāṣura</i> (father- in-law), <i>ṣvaṣrū</i>	{ ἐκυρός	socer, socrus.
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In this case the initial *ṣ* of Sk. represents an original *s* (Z. G. d. P. 499).

✓ <i>ṣās</i> (order), <i>ṣasti</i>	{ κανθαρός (ἄνθραξ Hesych.)	candidus, castus (= cand-tus).
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For *dh* + *t* = Lat. *st* cf. p. 207.

✓ <i>ṣi</i> (sharpen)	κίω, κίνυμαι, κινέω	cieo, incitare, citus.
<i>ṣvan</i> (dog)	κύων	canis.

Canis is for **cʷanis* or *cʷonis* with Indo-European *wo* = Lat. *ua* (p. 302).

<i>āṣma</i> (stone)	ἄκμων	āla (ac-sla), axis.
✓ <i>diṣ</i> (point), <i>diṣāti</i>	δείκνυμι, δίκη	dico.
<i>viṣāti</i>	εἴκοσι, Dor. <i>Flκατι</i>	viginti, viciens.
✓ <i>naṣ</i> (be lost)	νέκυς	nex, noceo, noxa.

✓ <i>viṣ</i> (enter), <i>veṣá</i> (house)	{ οἶκος	vicus.
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The Greek *oi* corresponding to Lat. *i* (*ei*) is a difficulty; cf. *oīvos* : *vinum*, but the word may be borrowed. From the same root may come the *Δοριέες τριχά-φυες* (τ. 177), the Dorians of the three clans, but cf. *κορυθαίης*.

Sanskrit.	Greek.	Latin.
अश्वा (horse)	{ ἵππος, ἵκκος (E. M. 474. 12). }	equus.

But though the connexion is certain, the word is difficult. In Greek $\hat{k} + \mu$ is indistinguishable from $k\mu$ before a dull vowel. $\hat{i}k\mu$ is the result of regressive, $\hat{i}\mu\mu$ of progressive assimilation, or we may compare new Ionic $\kappa\omega\varsigma$, Att. $\pi\omega\varsigma$ (with a velar). The aspirate in $\hat{i}\mu\mu$ is irrational, and is not seen in compounds like $\Gamma\lambda\alpha\upsilon\kappa\iota\mu\mu\omega\varsigma$. The ι of Greek (Indo-European e) is unexplained.

✓ $\pi i\zeta$ (to deck)	ποικίλος	pi-n-go, pictus.
✓ $\mu a\zeta$ (to reach)	ἐνὴ-νοχα	(nancisor, nactus).
	ἐνεγκον (ἡ-νε-νεκ- ον).	

The soft
velar g .

The law of the transformation of the soft velar g is precisely the same as that for the hard velar q .

In Sanskrit, where there is no trace of a succeeding labial μ , it becomes the corresponding palatal j before the thin palatal i (y) and a (= I.-E. e). Elsewhere it is g . But it is to be noticed that Sanskrit has no special symbol to distinguish the palatalised velar media from the true palatal j .

In Greek, if labialised, it becomes before ι , ϵ the corresponding dental δ : before α , τ , θ , ς , liquids and nasals, the corresponding labial β or its equivalent. Otherwise it appears as γ .

In Latin it would seem in the first instance to have become gu , just as q appears as qu , but this gu only remains after nasals in the middle of a word. Initially it appears as g before consonants, as v before vowels. Medially between vowels it is v .

Unlabia-
lised.

I. Velar g unlabialised is Greek γ , Latin g .	
✓ $j a n$ (to beget)	γένος, γίγνομαι genus, gigno.

Brugmann reckons this word as showing a palatal $\hat{j}$ (*Grundriss*, p. 293) and indeed the guttural is very stable throughout the derived languages. But we may find traces of labialisation (g^{μ}) in Boeot. $\beta a\acute{\nu}\acute{\alpha}$ ($g^{\mu}\eta\text{-}\acute{n}\acute{\alpha}$), beside $\gamma\eta\acute{\nu}\eta$ and Homer $\mu\acute{\nu}\acute{\alpha}\sigma\theta a i$ (for $*\beta\acute{\nu}\acute{\alpha}\sigma\theta a i$). The dental may also appear in $\acute{\delta}\acute{\iota}\delta\mu\omega\varsigma$ (beside *geminus* for *gen-minus* !)

$y u g\acute{a}$ (yoke)	ζυγόν	jugum.
✓ $b h u j$, $b h u g n a$ (to bend),	} $\phi u g\acute{\eta}$	fugio.
$g\acute{a} n j a$ (contempt)		
	γαγγανεύω	gannire (*gagnire).

Sanskrit.	Greek.	Latin.
<i>gargara</i> (whirlpool)	γαργαρεών	<i>gurgēs</i> .
Labialised forms are seen in <i>βάραθρον</i> , <i>δέρεθρον</i> ; v. infra.		
<i>gaṇḍā</i> (cheek)	γνάθος, γένυς	(<i>gena</i> (?), <i>gn-a</i>).

This is in Greek a case of metathesis of the nasal without lengthening the vowel (p. 115).

✓ <i>garj</i> (bellow)	γοργός.
<i>grāmas</i> (commu- nity)	γάργαμα, ἀγέλω, } <i>grex</i> . ἀγορά.

II. Velar *g* labialised (*gʷ*), but with *u* preceding or following, is in Greek γ.

	{ <i>voveo</i> (γοῶν-εο).
ἐγ-γύ-η	{ <i>vola</i> (hollow of the
γύαλον	{ hand).
	{ <i>volema</i> (large pear).
γυνή beside βαυά, μῦασθαι.	

Labialised,
but in con-
nexion
with *u*.

It is possible that this word should be separated from the Sk. ✓*jan*, Greek γίγνομαι, Lat. *gigno*. We may compare the Cretan *πρειαγευτῶν* (Cauer, *D. I. G.* 127), beside Att. *πρῆσ-βυς* where the β is by false analogy before η. The double stem was *πρῆσ-γυ-*, *πρῆσβετ-*; cf. Lat. *pris-cus*.

III. The velar *g*, labialised (*gʷ*), is in Sk. *g, j* (which represents an unlabialised form), Gk. β before *o, τ, θ, s*, liquids and nasals, Lat. *gʷ* (but for representation in Latin, see p. 139).

Labialised
before *o*,
etc.

✓ <i>gem</i> (go)	βαλνω	<i>venio</i> .
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βαλνω, *venio*, both go back to *gʷm̥iō*: the labial sonant *m̥* becomes *g* before *i*, as in *χλαῖνα* (*χλῆγία*) beside *χλαμύς*, *κοινός* beside *cum*, *καίνω* beside *καμώντες* (the dead), *αἰνός* for *ἀμ-ιος* (Sk. *ama*; cf. Goth. *Amal-rich*), *quoniam* for **quomiam*, *conicio* for *comicio*, etc. The *m* may be preserved in *meare* for **gmeare*, just as *natus* is for *gnatus* (Osthoff, *Z. G. d. P.* 550); cf. Goth. *qiman*, Eng. *come*.

<i>gurú</i> (heavy)	βαρύς	<i>gravis</i> .
For <i>gravis</i> cf. p. 187.		
✓ <i>jiv</i> (to live)	βίος	<i>vivus</i> .

Lat. *vivus* points to original *gʷiγmos*, though other languages point rather to a palatal, e. g. Slavonic has *z*. For the β of *βίος* we may compare *βαυά*, Sk. *gnā*.

✓ <i>ji</i> (to conquer), <i>gyā</i> } <i>βλα</i>	<i>vis</i> , <i>vi-olentus</i> .
(power)	

The Lat. *vis* may, however, be connected with Gk. *φίς*, *φίτες*, *φίφι*.

Sanskrit.	Greek.	Latin.
<i>jyā</i> , f. (bow-string)	βιός.	
√ <i>gu</i> (to sound)	βοή, βοᾶν	(boere, boare).

The guttural appears by false analogy in γός, γόω. The Latin *b* is abnormal, as in *bos*.

√ <i>gr</i> , <i>gir</i> (to swallow)	βορά, βι-βρώσκειν	vorare.
<i>gāus</i> (cow)	βούς, βῶς	(bos).

Bos may be borrowed, like *taurus* and *ovis*, or may come from the Italian dialects, where *g* = *b*, as in Oscan *kúm-bened* = *convenit*. But cf. p. 187.

<i>gārbha</i> (child)	βρέφος	globus.
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The dentalised form appears in Gk. δελφίς, δέλφαξ. The Aeol. βέλφης and Hesychian δόλφος (·ή μήτρα) are the result of confusion. In Latin from this root come *globus*, *glomus* (for *glob-mus*), and perhaps *ger(b)men* (for (*g*)*verbmen*) and *Galba*; cf. Suet. *Galb.* 3 *præpinguis visus quem Galbam Galli vocant*.

βλέφαρον, βλέπω.

Pindar (*Pyth.* 9. 43) has γλέφαρον, which shows the guttural.

βλήχων, Dor. γλήχων
in Theocr. 5. 56, etc.

√ <i>nij</i> (cleanse)	χέρ-νιβ-α, νίπ-τω,
<i>nīklā</i>	νίπ-τρον.

But νίω (for νιχο) has the guttural.

<i>rājas</i> (darkness)	ξ-ρεβ-ος, ξ-ρεμ-νός	Goth. <i>rigis</i> .
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Sk. *rājas* for **ragas* with *j* from oblique cases. *ερεμνός* is for *ερεβ-νος* as *ἀμνός* for *ἀβμος*, Lat. *agnus*, which is also an instance of *g**.

√ <i>tarij</i> (to threaten)	τάρβος	torvus (torgu-ος).
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The noun *tārjas* is for **targas* as *rājas* above (*K. Z.* xxv. 161).

φλίβω (Theocr.	} <i>fligo</i> .
15. 76) Att.	
θλίβω	

Cf. Goth. *bli-g-gv-an*, which is a nasalised stem.

ἀμνός	agnus.
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√ <i>gāh</i> (plunge) <i>gāhatē</i>	βαθύς.
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βαθύς for *βηθύς*, cf. *βένθος*, which is by false analogy beside *βάθος*.

√ <i>gal-</i> (to drop)	βάλλω, (βίλω)	volare.
<i>galana</i>	βάλανος	glans.
<i>ugrá</i> (strong)	ὕβρις.	

The guttural may be seen in *ὕγής*, cf. Sk. *ugrá* beside *ūj-ījan*.

Before *e*, *i*. IV. Velar *g** appears in Greek as *δ* before the palatal vowels *e*, *i*.

√ <i>gal</i>	ζέλλειν (Hesych.), ἐσδέλλοντες (Arcad.).
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We get the labial in *βολή*, *βάλλω*. *βάλλω* is itself a derived present. The primitive system would have been pres. *δέλλω* (nhg. *quellen*), perf. *βέβολα*, strong aor. *έβαλον* (*έβλινον*).

Sanskrit.

Greek.

Latin.

ζέρεθρον (Arcad., Strabo. 389).*δέρεθρον* (Tegeatic).Cf. *βάραθρον*. The Ionic *βέρεθρον* (Hdt. 7. 133) is contaminated.*gurú**έπιζαρέω* (Eur. *Rhes*. 441 ; *Phoen*. 45).Cf. *βαρύς*, *gravis*; but the form is the result of contamination, as before *αρ* (*γ*) we should have expected *β*.*διφούρα*.

This is given by Hesychius as the same as *γέφυρα*. The Boeotian *βέφυρα* is also quoted (or *βλέφυρα*, Athen. 14. 622 A), *βουφόρας* in Hesychius is a case of popular etymology.

δδελός (Dor. in Ar. *Ach*. 796).

The labial appears in *δβολός*. *δβελός* is contaminated. If the *o* is prothetic, we may compare *veru*.

gárbha (embryo)

δέλφύς, *ά-δέλφός* Lat. *vulva* (*vulba*, and in MSS. often *bulba*), Havet. *Mém. Soc. Ling.* vi. 116.

Cf. *βρέφος*, and v. supra. The root meaning is 'hollow,' especially of the belly or womb.

δέλεαρ.Cf. Aeol. *βλήρ* (Alcaeus 122 Bergk).

In the group *βανά*, *βέομαι*, *βίος*, *έβάθη* (for *έγεννήθη*, Hesych.), *γυνή*, *δλαιτα*, *διερός*, *ζή* (*διᾱει*), if we can safely connect all these, we get the velar under every possible form, but with much contamination. The collocation is, however, more attractive than certain.

Where *ζ* represents *γκ* it often goes back to a palatalisation of the velar before *ι*, as in—

μείζων for *μεγίων*, *μέγας*, I.-E. *meg-*.*δλείζων* for *δλεγίων*, *δλίγ-os*.*ρέζω* for *ρεγίω* beside *έρδω*, *εργον*, Sk. *rájyāmi*.

The Soft Palatal *ǵ* is Sk. *j*, Gk. *γ*, Lat. *g* before all vowels and consonants. The soft Palatal.

√jñā (to know)*γι-γνώ-σκω**gno-sco*.

Some have connected *γέγωνα* with metathesis of the nasal, in the sense of 'I am recognisable.'

Sanskrit.	Greek.	Latin.
<i>jānu</i> (knee)	γόνυ	genu.
<i>jambh</i> (snap)	γόμφος, γαμφαί.	
√ <i>aj-</i> (to drive)	ἄγω	ago.
√ <i>rj</i> (shine) <i>árjuna</i> (light)	ἄργυρος	argentum.
√ <i>rj</i> , <i>raj</i> (to reach)		
	ῥέγω	rego.
Cf. ἀλέξω, ἀλκή.		
√ <i>marj</i> (to wipe)	{ ἀ-μέργω, δμόργυν- μι, ἀμέλγω }	mulgeo.
	{ γαίω, γαῦρος, ἀγανός }	gaudeo.
	γάλως	glos.
<i>jaran</i> (old man)	γέρων, γραῦς.	
√ <i>jus</i> (enjoy), <i>jusáte</i>	γεύω	gustus.

Possible
confusion
of palatals
and velars.

This last instance suggests a difficulty. For though the Zend and Slavonic languages prove that the guttural of γεύω is a palatal, nevertheless the forms δεύασθαι, ζεύσασθαι in Hesychius show the same root with a dental, which should properly only be seen in the case of a velar. Similar cases of a dental alternating in Greek with a palatal guttural are δᾶ, δά-πεδον, Cyprian ζᾶ, ἐννοσί-δας (Pind. *Pyth.* 4. 33, 173) Δα-μάτηρ beside γᾶ, γαῖα, Cyprian ἄδνόν (Hesych.), Ἄρι-ἄδνη beside ἄγνόν, δύναμαι, Sk. *jānāmi*, γιγνώσκω (*K. Z.* xxv. 145-151). These forms seem to have originated in some confusion of the two guttural series. Johann Schmidt (*K. Z. l. c.*) supposes that there were originally four series of gutturals, the palatals and velars proper and the palatal affection of both series, and that in most languages the two series of palatals were reduced again to one, but that the instances quoted above are relics of the palatal affection of the palatal. This however is more symmetrical than convincing.

If δύναμαι and *jānāmi* are to be connected, both will go back to an original *ǵh-na-mi*, the *v* in δύναμαι answering to that in διδυμος (*gi-ǵh-mos*, *gēminus* for **gen-minus*): cf. *lig-ula* beside *lingo*, ἄπισ beside ἐπίς for the short vowel after the loss of the nasal. A connexion of meaning between δύναμαι and γιγνώσκω may be seen in instances like Π. 141 τὸ μὲν οὐ δύνατ' ἄλλος Ἀχαιῶν πᾶλλειν ἀλλὰ μιν οἶος ἐπίστατο πῆλαι Ἀχιλλεύς, and in the use of

δύναμαι in mathematical expressions, e.g. *τριηκοσίαι ἀνδρῶν γενεαὶ ἐννέαται* (are known as) *μύρια ἑτέρα* (Hdt. ii. 142); cf. *δύναται τοῦτο τὸ ἔπος οἱ ἐξ ἀριστερῆς χειρὸς παριστάμενοι* (ib. 30) and *können* with *kennen*, 'ken' with 'can.'

We may add a few remarks on the treatment of Indo-European *q* and *g* in Latin. The same rules will apply to *gh*. Velars in Latin.

1. Before consonants, *o* and *u* they appear as *c*, *g*, the labial element, if ever existing, having disappeared.

2. Before *a*, *i*, *e*, as *cū* (written *qu*), *gū*, keeping the labial element.

It is clear that in these cases the velar is indistinguishable from the palatal guttural followed by *u* (*k̂* + *u*) in *ecos*, *ecom*, *equi*, *eco*, *eque*.

But these laws are modified by the laws of sound combination, by which

(i) The soft *g* disappears in Latin at the beginning of a word before vowels, leaving the element *u*.

(ii) In the middle of a word *g* is lost after a vowel; after a nasal it appears as *gu*; near a liquid, as *b* (?).

The last two laws also apply to *gh*.

The following instances seem to bear out these laws:—

I. Velar *q*.

frequens beside *farciō*, *far(c)si*; cf. *φράσσω*.

laqueus „ pellac-s, illec-s, illic-*jo*.

liquere „ prolic-sus, elic-sus; cf. *λίπος*.

prope for *proque (v. p. 128), proc-simus.

quinque for *penque, quin(c)tus, Quinctius.

torquere beside *tor(c)tus*, *torculum*; cf. *τρέπω*.

Perhaps we may connect *trico*, *tricae*.

arquitenens beside *arcus*.

sterquilinium „ sterculus.

laquear „ lacus.

Querquetulanus (Tac. *Ann.* 4. 65) beside *quercus*.

ac (for at-c) beside *atque*; cf. *τε*.

secundus, socius, assecla, sectari, beside *sequor*, *sequax*.

(Cf. *ἔπομαι*, *δοσσητήρ*, p. 129.)

nec-opinus, nec; cf. *neque*.

acula beside *aqua*; cf. *Μεσάπιοι*, *Ἀπὶν γῆ* (p. 130).

locutus beside loquor, loquax.

Cf. *λάσκειν* for **λακ-σκειν*.

currere beside equiria (Ov. *Fast.* 2. 859; Paul. *Fest.* 81)
for equiquiria. (Cf. *πορεύειν*?).

-lictus beside linquere; cf. *λείπειν*.

crocire, gloctorare beside querquedula.

Cf. *κέρκος*, *κορκορυγή*. The *g* in *gloctorare* is due to the liquid; cf. *gloria* beside *κλέος* (p. 132).

seco (sīca) beside coinquo (Paul. *Fest.* 65 for coin-squo).
insectio, insece beside inquam (for insquam).

Cf. *ἐνισπεῖν*, *ἐννεπε*, etc. p. 130.

coxi, cocus beside coquo.

oculus beside *ὄψ*, *ὀφθαλμός*, Boeot. *ὀκταλλός*.

incola, cultus, colo beside inquilinus, esquiliae.

jecur beside *ἦπαρ*.

vox, praeco (*prae-veco) beside *ἔπος*.

τέταρτος, *π-ί-συρες* beside quartus (*ἡτῦρτος*, p. 129).

πατάσσω beside quatio.

σπαράσσω beside squarrosus (Paul. *Fest.* 328).

(*λοβός* beside siliqua?).

λοβός for **σλωπος*?, the *i* in Latin *siliqua* being phonetic, and the *σ* in Greek being lost before *λ*; cf. *ὀ-σλιθ-θάνω* (*ὀλίσθάνω*), Lat. (*s*)*lubricus*, Eng. *slide*.

νήπιος, *νηπύτιος* beside nequam.

καρκαίρειν beside querquerus (Paul. *Fest.* 256).

κέντρον beside triquetrus.

Contus in this case is borrowed.

coc-sa beside conquinisco, conquexi.

κείρω, curtus beside quiris, Quirites (Ov. *Fast.* 2. 477).

ἄκαρον (Hesych.), *ἀχλὺς* beside aquilo, aquila, aquilys.

tri-lic-s beside liquis, ob-liquus.

Cf. *λικριφίς*, *limus* for *lic-mus*.

κύκλος : coluber.

Both for *κῆκεκλ-*

ἔμ-παιος : quaero.

(σ)κοσκυλμάτια : quisquiliae.

iacio : *λάπτειν*.

λάπτειν for *ῥι-χάκῃ-τειν* as *λάλλειν* for *σι-σῶ-ζειν*.

κῆτος : squatina.

ἡλεκτρον : arquatus.

Arquatus is usually connected with *arcus* in the sense of 'the colour of the rainbow,' but this is not satisfactory.

II. Velar g.

frui, fruniscor for *frugui, *frug*niscor; cf. fruges.

agnus : ἀμνός for *ἀβνος.

Conceivably we may put here *avilla*, *arena*, for **aguilla*, etc.

glans : βάλανος.

globus : βόλβος.

gremium (for *grebmium) : βρέφος, etc. (p. 136).

gravis : βαρύς.

grādis : βλωθρός.

Both for *gē*, with different terminations.

mig-rare : ἀμείβω.

volare : βάλλειν.

-vorus : -βορος.

vivus : βίος, etc. (p. 135).

virus for *gwignos*. A.-S. *cwic*, Eng. *quick*.

venire : βαίνειν.

venter : γαστήρ.

Sk. *jaþharas*, I.-E. *ggt-ter*.

fivere (for *figere* in Cato, *Fest.* 92) : figo, θιγ-γάνειν (?).

(gesto : βαστάζειν).

This, however tempting, is doubtful, because of Latin *g*.

(severus, σέβας, σοβέω, σεμνός?).

gurdus; cf. βραδύς.

Gurdus is however said to be Spanish by Quint. i. 5. 57.

stingu-ere beside stinctus, instigare, στίγ-μα.

langu-ere beside latus.

tingu-ere beside tinctus, τέγγειν.

ungu-ere beside unctus.

Possibly compare *δβρός* for *ηγ-ρός*.

πρέσβυς, Cret. πρείγυς : priscus.

If no Greek or Latin *b* represents an Indo-European *b*, the following may show *g* becoming *b* medially near *r*:

τύρβη, turba (cf. turgeo?).

φορβή, herba, forbea.

The Aspi-
rated Velar
Guttural.

I. The unlabialised aspirated velar *gh* is in Sanskrit *h*, *gh*, in Greek *χ*, in Latin in the first instance *g*.

I.-E. *ghostis* hostis Goth. *gasts*.

steigh Sk. *stighnote* (to } *στείχω*.
mount)

ghed *χανδάνω* prehendo, praeda.

leg *λέχος*.

çankhás (shell) *κόγχη* congius.

II. The labialised velar *gh** is in Sanskrit *h*, *gh*; in Greek, *θ* before *ι*, *ε*, but *φ* before *ο*, *τ*, *θ*, *ς*, liquids and nasals, elsewhere *χ*: in Latin *ghu*, which becomes initially *f*, medially *gu* after a nasal, *v* between vowels, *b* in connexion with *r*.

gharmá, *ghṛná* } *θερμός*, *θέρος* formus, furnus.
(warmth)

áhis (snake) anguis.

I.-E. *sneigh** *νίφα* nivis, ninguit.

νεφρός { nefrones, nebrun-
dines.

Nebrundines is a Lanuvian, *nefrones* a Praenestine word; cf. *nefrendes* in Varro, *R. R.* 2. 4. 17, and Liv. Andr. *Frag.* 38 (Ribbeck).

hanti, *ghn-anti* *θελνω*, *φόνος* (-fendo?).

We may put here *θνή-σκω*, *έθανον* as a new formation for the regular **έφανον*. Cf. *φατός*, *έπε-φν-ον* (cf. p. 223).

✓*arh* (deserve) } *ήλφον*.
árhatī, *arghā* }
(worth)

(σ)τέρφος tergus.

raghú (small) { *ελαχύς*, *ελαφρός*, } levis.
ελάσσων

I.-E. *gh*edh* { *θέσσεσθαι*, *πόθος*
(for **φοθος*).

θήρ, Aeol. φήρ	ferus.
φηρσὶν ὁρεσκαφοῖσι A. 268; cf. Thessalian Φιλόφειρος.	
ὄνυχ-ος	unguis.
ἀφρός, ἄχνη	agna (Paul. <i>Fest.</i> 211).

We may also put here ἐ-θέλ-ω beside φαλίζει (Hesych.), Sk. *har-*; δάφνη beside Thessalian δαύχνα (for δαχ^{fra}); αἰχὴν, Aeol. αὔφην (Ahr. I. 42), Goth. *agga*, pointing to an original *ἀμφων, gen. *ἀγχενος, with complete confusion of the consonants in inflexion.

More doubtful are—

καχάζω, καγχάς,	cachinnus beside	καφάζειν (Hesych.).
κωχεύω	beside	κωφεύω (Hesych.).
Sk. √ <i>hṛṣ</i> (be excited)	horreo.	
ὄρνυχες (Theocr., Pind., Callim.)	ὄρνιθες.	

The connection of βένθ-ος, βάθ-ος with βάπ-τω, βαφ-ή, Sk. *gáhatē*, is doubtful.

II. The palatal aspirate *gh* is in Sk. *jh* (*h*), Gk. *χ*, Latin *h* Palatal Aspirate.
(or *g* after *n*).

<i>himá</i> (cold)	{ χιών, χειμών, δύσ- χιμος	hiems, bimus (bi- himus).
√ <i>vah</i> (to carry)	δχος χαμαί (χημαί)	veho. humus, homo.
<i>Homo</i> = δ ἐπιχθόνιος. The older form is <i>hemo</i> ; cf. <i>sēmo</i> = <i>se-hemo</i> , <i>nemo</i> , etc.		
<i>sáha</i> (power, victory)	{	ἔχω, ἔξω, ἔ-σχω-ον.
√ <i>spṛh</i> (be eager)	σπέρχω.	
I.-E. <i>angh</i>	ἄγχι, ἄσπον.	

<i>hári</i> (golden yellow)	{ (χλόη?)	{ hortus, cohors. holus, helusa (Paul. <i>Fest.</i> 100).
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folus is dialectic.

	χορδή	hariolus (haruspex).
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fariolus is dialectic.

<i>áhas</i> (distress)	ἄγχω	ango.
√ <i>mih</i>	ὀμχέω	meio, mingo.
√ <i>guh</i> , <i>gúhati</i> (he conceals),	κεύθει (for *χευθει),	pointing perhaps to I.-E. <i>gheugh</i> .

The above are perhaps all the cases where the distinction between the palatal and velar aspirates can be said to be certain, and in many even of these authorities are divided.

The Aspi-
rated Gut-
turals in
Latin.

In Latin the treatment of the aspirated gutturals is very uncertain. The following rules are given as indicating the general law, but not with any idea of their being accurate or complete.

I. *gh* is in Latin *h* initially before vowels, medially between two vowels.

hi-ems, bimus (*bi-himius*), *χειμών, δύσχιμος*, Sk. *himá*; *humus, homo, χαμαί*.

We may possibly connect *χθών, χθαμαλός* (cf. *humilis*) for *χιών*, etc. *Humus* is a later formation from *hum-i* (*hgm-i*, cf. *χαμ-ai*), as the stem is properly consonantal.

holus, helvus (Paul. *Fest.* 99) beside *χλόη, χλωρός*, Sk. *hári*.

The stem *hel-* not yet altered to *hol-* is preserved in *helusa* (= *holera* Paul. *Fest.* 100); cf. *helvella* (Cic. *Fam.* 7. 26. 2), *helveolus, helvaceus*: *folus* is from the Italian dialects.

hira, hillae, χολή, χορδή, Sanskrit *hirā* (gut); cf. *hariolus* (dial. *fariolus*), *haruspex*.

hir, hirudo, χείρ (for *χίρ-s*), Sanskrit *har* (to take off).

hir = *hand*, Lucil. ap. Cic. *de Fin.* 2. 8. 63 (*her-us*?).

(*h*)*anser*

χήν.

aio, adagium, nego, ἤχαιεν, ἡμί, ἦ: Sk. *āha* (he says).

ἡμί (*ἦ δ' ὅς*), for **ἡχμί*, **ἦχτ*, *aio* for *āhio*. The *g* in *adagium, nego* (*ne-agho*) is from the old pres. **agh-mi*.

lien

σπλήν.

σπλήν for **σπληγγν*, cf. *σπλάγγχον*, *lien* (for **lihen*); *splēn* is borrowed.

hi-o, hi-sco

χαίνω, χάσκω.

veho, via (**vehia*)

(*F*)*όχος*

{ Sk. *váhati* (he carries).

II. *gh** is in Latin before *r* initially *f*, medially *b*.

formus, furnus

θερμός

gharmá, ghrná.

ferus, fera

θήρ.

frio

χρίω.

fremo, frendo

χρόμος, χρεμίζω.

nefrones, nebrundines

νεφρός.

The connection of *fundo, fulilis* with *χέω* is doubtful. *Infimus* may be formed from **in fumō*, *in humo* with a medial *gh**, so possibly *fundo* from the compound forms (*infundo*).

III. *gh** medially after a nasal is *-gu-*, but in many cases the *-u-* disappears, and *gh** is indistinguishable from *gh*.

It is difficult to separate *ἔγχελυς* and *anguilla*, in spite of the vowel, and it is tempting to connect *ἔχϋς*, *ἔχιδνα*, and even *δφϋς*, *δχος*. *δγχω* seems to have a palatal aspirate, otherwise it might be put here.

Lingua is for *dīngua*, Indo-European *dṅgh*, *lingo*, *līgula*, Sanskrit *√lih* (p. 138).

Mingo beside *meio* has the palatal, which appears as *g* after *n*, between vowels as *h*. Cf. *ὀμίχλη*, *μοιχός*.

Ning(u)it, *ninguis*, *νείφει*, *νίφα*, *nivem*, Indo-European *sneigh*.

Especially to be noticed are *brevis* (*breh̥uis*, *br̥ngh̥is*), Greek *βραχύς*), *levis* (*leh̥uis* *l̥ngh̥uis*, Greek *ἐλαχύς*), beside *pinguis* (**p̥enguis*, *p̥ṅgh̥uis*, Greek *παχύς*), as showing the different treatment of *-ṅgh-* and *-ṅh-* in Latin.

IV. *gh** medially between vowels is *v*.

red-uvia beside *unguis*, *ungula*, *δυνυχ-*.

uva (for **ugua*, **ongua* ?), *ὄμφαξ*.

niv-em beside *ninguit*, *niṁ* (*snigh̥is*).

fluere, for **flovere*, **flevere*, **flegh̥uere*, cf. *flov-ius*, *confluges*, *confluxi*), *φλέψ*, (*φλέφ-s*).

It may be possible to connect *παρθένος* (for **φapθenos*) with *virgo* (Indo-European *gh̥rgh-*) with assimilation to *rir*, *virago*.

CHAPTER VII.

THE DENTAL, LABIAL, LIQUID, AND NASAL CONSONANTS.

The Hard
Dental T.

THE hard dental *t* is unchanged in Greek and Latin.

τῦ (Doric), σῦ tū.

The *ū* is lengthened in Latin in a monosyllable ending in a vowel, the only exceptions to this law being the enclitics *-que*, *-ve*, *-ce*, *-te*, *-ne*.

τρέις, τρίτος trēs, tertius.

Sk. *trāyas*, *trītyas*: for *ri* becoming *er* in an unaccented syllable in Latin cf. p. 192. Sanskrit (*trītya*) and German (Eng. *thir-d*) both show that the historic accent in Latin and Greek must have been τριτός, *tertius*.

τό, τῆμος, τώς, etc.	to-t, to-tus, tum, tam, is-te, etc.
τέρμων, τέρμα, τέλος	terminus.
τατός, τείνω, ταναός	tendo, tenuis.
τύμβος	tumere, tumulus.
τέρσεσθαι	torreo, terra.

Torreo = *ters-ei-o* (cf. *to(r)s-tus*), *terra* = *ters-a*, cf. *te(r)s-qua* with I.-E. termination *-go*, as in Gk. ποδα-πός.

τείρω	tero, trīcae.
τάλας, τλᾶ-τός, } τάλαντον }	(t)lātus, tuli, tollo, tolerare.
τρύω	trudo.
τε-ταγ-ών	tago, tango.
τέγγω	tingo.
τρέμω	tremo.
τρέ(σ)ω	terreo (ters-eo?).
τύρβη	turba.
τάρβος	torvus.

Indo-European *tergos*.

ταῦρος	taurus (borrowed?).
τήκειν, τᾱκέις	tābes.

ἀντί	ante.
ἔτος, ἐτήσιος	vetus, veterinus.
ἰταλός (Hesych.)	vitulus.

Italia is usually connected, but the absence of *v* makes this doubtful; but cf. Obo. *Viteliū*, *Vitellius*.

πέτομαι, πί-πτω, πτερόν peto, penna.

πτερόν for *πέτ-ρον, Ang.-Sax. *fether*; *penna* (*pesna*, *Fest.* 205, 209) = *pesna*.

φράτηρ	frater.
ἑ-κατ-όν	centum.
κάρταλον (Hesych.),	} crātes.
basket	

κάρταλον, Eng. *hurdle* = *krt*, *crātes* = *krt* (*Z. G. d. P.* 178).

πατήρ	pater.
ἄττα (γεραῖ) Epic.	atta (<i>Paul. Fest.</i> 12).
-τός (past part.)	-tus.

But -τλ- in Greek becomes -cl- in Latin (cf. *scelis* : *stilis*), in ἀντλῶν : *anclare*, and Greek -τρον (κέν-τρον) is often Latin -*crum* (*simula-crum*) or -*c(u)lum* (*baculum* : βάκτρον). But cf. *aratrum* : ἄροτρον.

The soft dental *d* is unaltered in Greek and Latin.

Soft Dental
D.

δέκα	decem.
δίδωμι, δῶρον	dono, donum.

The reduced root is seen in *däre*, *dätus*, *δα-νείζω*, *δοτός* (*p.* 236).

δῖφος	divus.
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Reduced root in *δφ-ήν*, *δοάν*, *diu*.

δάκρυ	dacruma (<i>Paul. Fest.</i> 68).
δαμάω, ἀδάμας	domare.

Reduced root in *A-δμη-τος (δῆ), δμ-ός. The Ablaut *a* : *o* between the two languages is noticeable.

δείκνυμι, δίκη	dico, indico, dicis (causa).
ἀνδάω, εὐαδε, ἀδύς	suadeo, suā(d)vis.
δαπάνη	damnum, dapes.

Damnum = *dap-num*, as *somnus* = *sop-nus* (*sop-or*). We can hardly connect *δέπας* because of the vowel.

δαρθάνω (δρ-)	dormio.
δασύς, δαυλός, Δαυλός	densus.

οἰκόν-δε	en-do, in-du-perator.
δέμω, δέμας, δόμος	domus.
δόλος	dolus.
δεξιός	dexter.
ἔδος, ἵζω (σι-σδ-ω)	sedeo, sēdes.
ἔδω	edo, esca (ed-sca).
ἰδεῖν	videre.
ἰδρῶς	sudor (for σρεῖdor).
μέδομαι, μέδιμνος	modius, modus.
<i>Meditari</i> more probably connected with μελετᾶν.	
ὀδμή, ὄζειν	odor, olere.
ὀ-δούς	(dens) p. 307.
οἶδμα, Οἰδί-πους	aemidus (Paul. <i>Fest.</i> 24).
<i>aemidus</i> for * <i>aedmidus</i> , but the vowel is a difficulty; some connect it with αῖμα, where the aspirate is obscure.	
πέδον, δά-πεδον	oppidum, oppido.
σχίζω	sci-n-do, sci-cīd-i, scīd-i.
ὔδωρ, ὕδρα	unda.
ὔδωρ for *σφεδωρ, unda for uḍna, cf. Ἄλοσ-ύδνη.	
πέδη	impedire, compes, pedica.
καρδία	cor, crēdo.
χανδάνω	prehendo, praeda.
Πολυ-δευκής, ἀδευκής,	} dūco, dūcis.
ἐνδυκέως	
ἀ-δευκής (= not attractive), δαιδύσσεσθαι ἔλκεσθαι Hesych.	
δοκέω, διδάσκω	disco, decet.
διδάσκω, for δι-δκ-σκω (!), <i>disco</i> for di- <i>ilc</i> -sco.	
δηλέομαι	dēlere.

Dental
Aspirate
DH.

The dental aspirate *dh* is in Greek *θ*. Latin, having no aspirates, represents it initially by *f*, medially by *d*, or in the neighbourhood of *r* by *b*.

θερμός, θάλπω, θέρος formus (Paul. *Fest.* 83).

Cf. *Formiae, fornax, formus, ferreo*. But in this root a velar guttural rather than a dental is original (cf. p. 142).

τί-θημι, θε-τός facio.

Facio represents the reduced root with *stavarabhakti* vowel; cf. *θή-π-η*.

θήλυς, θηλᾶν, τιθήνη femina, felare.

τιτθή, τηθίς, θεῖος, τηθή feles, felix, femur.
 θύω, θυμός fumus, suffire.

Suffire for *-fuire*; cf. *fio* for *fxio*.

θιγγάνειν fingere.
 θύρα fores.

Fores for **fures* as *folium* beside φύλλον.

θύρσος fu(r)stis.
 θραύειν frustum, fraus, frustra.
 θαρσεῖν fa(r)stus.
 θήρ fera.
 θρᾶνος, θρηῖνος frētus, frēnum.
 θαιμός, οἰκία Hesych. familia, famulus.
 αἶθω aedes, aestus, aestas.
 γήθειν, ἀγανός gaudeo, gavisus.
 ἡίθεος viduus.
 ἐνθα inde (p. 62).
 ἐ-λεύθερος liber for **leuber*.

loeber is found (Paul. Fest. 121).

ἐ-ρυθρός ruber.

Rufus, cf. *robustus*, may be from the Italian dialects; *rutilus* is for **rud-tilus*.

οὔθαρ uber.
 ἔθος (σφεθος), ἡθος sodalis, suesco, (soleo?).

Sodes may be a voc. from this root.

ἀθήρ, ἀθάρρα ador, adorea.

In terminations:

-θρο- (πολλίε-θρον) -bro (vela-brum).
 -θλο- (θέμε-θλον) -blo-, bulo- (sta-bulum).

ἀ-φεθλον cannot well be separated from *vad-is, praes* (**prae-vides*), in which case we shall have a vowel variation *a* : *e* between Greek and Latin.

In the following cases an original *d* becomes *l* or *r* in Latin:

δάκρυ lacrima (cf. dacrima).
 δαήρ levir.
 ἔδος sedere, solium, consul (?).

Cf. *dingua* in the grammarians beside *lingua*. So *udus* and *uligo*, unless *udus* is for **ugdus* (ὑγ-ρός).

Alternation of *d* and *l* in Latin.

ad ar-cesso, ar-biter, ar-fuerunt.

Cf. *apor* = *apud*. These are probably from Umbro-Samn. dialect (*Grundriss*, § 369. 1).

adeps ἄλειφαρ.

odor olere.

Ὀδυσσεύς Ulixes.

So *capitodium*, *impelimenta* (Paul. *Fest.* 108), *cadamitas*, *dautia* (for *lautia*, ib. 68, Corss. *Ausspr.* 1. 81).

A Latin *d* = Indo-European *dh* may become *l* in

miles (mizdes) μισθός.

móles, móléstus, } μόχος.
(mogsdhes) }

malus (mazdus) Eng. *mast*.

Hard Labial P.

The hard Labial *p* is unchanged in Greek and Latin :—

πατήρ pater.

πέτομαι, πίπτω peto.

πνός, πύθομαι putris, putere.

πύ-θ-ομαι : *pu-t-ere* = *λα-θ-* : *la-t-ere*.

πυγών, πύξι, πυγμή, } pugil, pugno,
Πνύξι, πυκνός } pugna, pugnus.

πύρ, πύριρ pru-na, prurire.

παύω, παῦρος pau-cus, pauper.

πέδη im-pedire.

ἐπί-πλ-οον, ἐπι-πο-λῆς } pellis.

πέλλα pelvis.

πόσις, δεσ-πότης potens, potis.

πελιός pullus.

ἐ-πάγ-ην, πάχ-νη paciscor, pa-n-go.

Cf. *pro-pag-o*, *pig-nus*, *pa(g)lus*, *pax*, from which last *paciscor* is probably derived, hence the *c*.

πωλέω, πάλλω, } pello, palea.
πάλλα }

For the Ablaut cf. *στραφάω*, *στρέφω*, *εστράφην* (v. p. 249).

παλάμη palma.

παραί prae.

παρά per, pro-per-us.

For connexion of meaning cf. *per-do*, etc. with *παρὰ τοὺς νόμους*. The following words among others may be classed with the same root, *περάω, πόρος, πείρω, πειράω, πέρνημι, πιπράσκω, πείραρ, portus, porta, pretium, interpres, paries, peritus*, etc.

πίλος	pileus.
πῖμπλημι, πλῆθος	plenus, plebes.
ἐ-πλάγχ-θην	plango.
πλέω, πλύνω	pluit.
πέπωκα, πώνω (Aeol.)	} poculum, potus, posca.
πράσον	
πρέσβυς	porrum.
	priscus.

Cf. Cret. *πρεῖγυς, πρ-ίν, pr-ior* (p. 135).

The following show the loss of an initial consonant, especially *s-*. Compare p. 202.

πτέρνα, πτυρέσθαι ex-sternare, con-sternare.

Indo-European *spter*; cf. *perna, pernia*.

πτύω spuo.

Indo-European *spxu*.

The following are instances of a medial *p* :—

σπάρτου, σπυρίς	sportula.
ὕπνος	somnus, sopor (p. 217).
ὑπέρ, ὑπείρ	super.

The aspirate in Greek and the *s* in Latin are now explained as the remnant of an original *tξ* (*tξ-υπέρ = συντέρ = υπέρ, super*). There is no aspirate in Sk. *upari*.

ἀπτω, ἀφάω apiscor, aptus, amentum.

For aspirate in Greek, see p. 173 : Indo-European $\sqrt{abh}$.

κάπρος	caper.
κλέπτειν	clepere.
ἀρπάζω, ἀρπη	rapio, sarpo.

Indo-European $\sqrt{srp}$, *sarp*.

ἐ-φολπα	voluptas, volup.
ἐποψ	upupa.
ἐπτά	septem.

See p. 369.

ἔρπω serpo.

Rēpo may be for *srēpo*.

λαμπρός limpidus.

νέποδες nepos.

ἔπορον, πεπρωμένη pars, portio.

For Ablaut see p. 251.

πλεῖονες plures.

Old Lat. *pleotes* = *pleiotes*, p. 97.

πηλός pālus (?).

πήνη pannus.

πίσσα pix.

πίσος pisum.

πίπος pipilare.

πιδύω, πίδαξ, πίτυς, }
 πίνος } pīnus, pītuita.

These words are connected with a Sk. $\sqrt{pi}$ (to swell), Curt. *G. E.* 276.

πεκτεῖν pecto.

πατάνη, πίντημι (πε-
 τάννυμι) } patere, patina.
 πίντημι (= πι-πτ-
 νημι ?) } patibulum.

πέδον op-pidum.

πέπαμαι patrare.

πρό pro.

παθεῖν patior.

But the relation is difficult, as *παθεῖν* beside *πένθος* must be for *πηθεῖν*. Hence Lat. *a* is unexplained.

πτοέω paveo.

έρκη porcus.

Cf. Germ. *ferkel*, A.-S. *fearh*, Eng. *farrow*.

πλάγιος, Dor. πλάγος plāga.

πλακοῦς pla(c)nus, planca.

πλέκω plecto.

Plico from the compounds *im-plico*, etc.

πλεύμων pulmo.

πῶν papaver.

ποικίλος

pictus

Sk. $\sqrt{\text{piç}}$ (adorn).

πένης, πονηρός, πόνος

penuis.

Pénuria is rather to be connected with σπάνις with the *ē* degree of Ablaut, (p. 236).

In the prepositions *ab*, *ob*, *sub* we have a Latin *b* answering The Hard Labial in Latin. to a Greek π in ἀπό, ἐπί, ὑπό. A final *p* is unknown in Latin, except in *volup* for *volupe*; a final *b* is only found in these three words.

The *p* of Sanskrit *ápā*, Greek ἀπό, is, according to Osthoff *Z. G. d. P.* 25) kept in Latin *po-lío*, *po-situs*, where *po-* is the reduced form of an original **apo*.

For the interchange of *p* and *b* between Greek and Latin, we may compare Ennius' *Burrus*, *Bruges* for Πυρρός, Φρύγες: so *buzum*, πύξος: *carbasus*, κάρπασος. So within the limits of Latin we find *publicus* beside *populus*, *Poplicola*, *Publicola*: *potus*, *bibo*, Sanskrit *píbāmi*, Greek *πίνω*: *scapula*, *scabellum*: *sapo*, *sebum*: *sapere*, *sibus* (Paul. *Fest.* 336).

On *coquo* for **quequo*, *quinque* for **penque*, *prope* for **proque*, see p. 128.

The soft labial *b* seems to have been almost unknown in the original language. It is very rare in Sanskrit; though common in Greek, it there originates mostly from *g*, *f*, or μ before a liquid; uncommon in Latin, except as the representative of medial *dh* near *r*, medial *bh* or initial *dh*. The Soft Labial B.

It may be original in the following cases:—

μόλυβδος

plumbum.

Indo-European *mlombo-*, μόλυβδος = *m-s-lmb-*.

δ-λιβρός

lubricus

 $\sqrt{\text{slib-}}$ Eng. *slip*.

τύρβη

turba.

ἄβιν (Hesych.)

abies.

In *labium*, Anglo-Saxon *lippe*, English *lip*, *labium* (for **lebium*) may owe its vowel to *lambo*.

λοβός

Cf. English *lop-eared*.

βάκτρον

baculum (?).

But cf. p. 62.

βούβαλος, βουβαλῖς }
 (if not borrowed } bubulus, bubulcus.
 words)

βρόξαι (Hesych.) brochus.

βριαρός brutus (*broitus).

On βοῦς, bos, boare, see p. 136.

β is a merely euphonic insertion between μ and λ or ρ in :—

ἥμ-β-ροτον (cp. ἀβροτάζω = ηβ-ροτάζω) : ἥμαρτον.

μεσημ-β-ρία : ἡμέρα.

μέμ-β-λεται : μεμέλῃται.

ἄμ-β-ροτος : βροτός, dial. μορτός.

ἐμ-β-ραται (Hesych.) : εἴμαρται.

μέμ-β-λωκα : ἐμολον.

ἄμ-β-λύς : ἀμαλός.

ἄμ-β-λακίσκω, ἄμ-β-λώσκω : μαλακός.

γαμ-β-ρός for *γαμ-ρος.

θύμ-β-ρα : θυμός.

Compare the corresponding insertion of δ after ν in ἀν-δ-ρός.

The following words, where β appears both in Greek and Latin, seem onomatopoeic :—

βάρβαρος : balbus.

βαμβαίνω, βαμβάζω, βαμβαλίζω : babulus.

βληχᾶν : balare, Anglo-Saxon *blātun*, *bleat*.

βαύβυκες : bubo, bufo.

βάτραχος, dial. βρόταχος : blaterare.

βάτραχος for *βρατραχος as δρύφακτος for *δρυφρακτος.

brachium, *buccina* may be borrowed from βραχίων, βυκάνη.

In the following words Greek β is Latin *f*, mostly in the neighbourhood of liquids ; but β may represent an earlier φ (cf. βλύω : φλύω).

βλύω, φλύω, φλέψ, φλύκταινα fluo.

βράσσω fretum, fritillus.

βρύω frutex, defrutum.

But βρώ may represent *gru*, and be connected with *con-gruo*, *in-gruo*.

βάσκανος fascino, praelescine.

βάσκιαι (Hesych.) fascis, fascia.

βρέμω fremo.

For Greek β representing *g* v. p. 135.

β represents :—

(1) An original μ before liquids in :—

βλίττω : μέλι.

βροτός : μορός, μέρορες, mors.

βραδύς : mollis (m]dú-).

βλώσσω : ἔμολον.

βραβεύς : margo.

Indo-European *marg*.

(2) An original *f* regularly in Aeolic. The connexion of βλαστός and Sanskrit *vr̥ddhā* is very doubtful.

A Latin *δ*, where not original, represents :—

(1) initial *dx* in :—

bellum : duellum.

bonus : duonus.

bis : δύο, δῖς.

biplex : duplex.

bimus : dimus.

(2) *g* in :—

bos, βοῦς, Sanskrit *gāús*.

boere, βοή, γόος.

But *bos* may be from Italian dialects (p. 136) and *boere* may be an independent onomatopoeic word. On *baetere*, ἀμφισβητεῖν, v. p. 451.

Indo-European *bh* has become in Greek the hard aspirated labial φ. Latin, having no aspirates, represents it initially by *f*, medially by *b* :—

φῦναι fuisse.

πυθμήν fundus.

πυθμήν by dissimilation for *φυθμην; cf. Eng. *bottom*.

φράσσω farcio.

φύλλον folium.

πίθειν (*φειθειν) fido.

φηγός	fagus.
φέρω, φώρ	fero, fur.
φράτηρ	frater.
φαιμί	fari.
ὀ-φρύς (Macedonian ἄ-βροῦτες)	} frons.
φάος, φάκελος	fax, focus.
φυγεῖν	fugio.
φρύνη	furvus.
πενθερός (φενθερος)	of-fendix.
νέφος	nebula.
ὀμφαλός	umbilicus.
ὀρφανός	orbus.
νεφρός	nebrundines (p. 142).
ρόφέω	sorbeo.
ἄμφω	ambo.
ἀμφί	ambi.
ἄλφος	albus.
γλύφω	glubo.
ἄφρος (Sk. <i>abhram</i>) ὄμβρος (?)	} imber.

ἄφενος may be connected with *opes*, with Ablaut *a* : *o* (p. 250).

The Liquid L. The liquid *l*, where non-sonant, is unchanged in Greek and Latin, except so far as it alternates with *r*; and we need give only a few instances.

ἐ-λαχ-ύς levis.

Indo-European *lghhú*.

λείπειν	linquere.
λέων	leo.
λοξός	luxus, luxare.
λούω	lavo.
λύω	re-luo, so-lvo.

Solmo = *se-luo*, with *el* = *ol* (p. 190).

λύχνος	lucem.
λέγω	lego.

ἀλφαῖνω, ὄλβος,	}	labor (?).
λαβεῖν		

The root may be *lað-*, with a metathesis of the liquid in ἀλφ-αῖνειν : ὄ-λβ-ος may possibly represent the reduced root ; cf. ὄ-γ-μος, p. 246.

ἐλαύνω has been connected with *alacer*, but more probably contains the root *uel-* of ἐλίσσω, *volvo*, etc.

oleum is borrowed from ἔλαιον, keeping the Greek accentuation (cf. *ancora* by ἀγκῦρα) but changing *el-* to *ol-*. On the other hand, *olīva* (beside *olea*) keeps the Greek quantity ἐλαία (cf. Ἀχαιοί, which gives *Achaei* or *Achivi*, Ἀργεῖος, which gives *Argivus* or *Argeus*) (cp. p. 188).

γλυκός : *dulcis* is doubtful, but a form δεῦκος, *deukh's* is quoted, so that the original may conceivably have been *lleuk̃*.

Indo-European *r* is unchanged, but often has a prothetic vowel in Greek (cp. p. 196). Few instances are required. The Liquid R.

ἄρ-θρον, ἀραρίσκω,	}	ar-mus, ar-tus, ar-mentum.
ἄρματα		

ἀράχνη	arana.
--------	--------

ἀρόω, ἄρουρα	aro, arvum, arena.
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ἔρετμός	rēmus (rēt-smus).
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But this is an obscure group of words, for Greek regularly has a vowel before the liquid.

ἐρέβινθος	ervum.
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With *β = f* (?).

ἐρωδιός	ardea.
---------	--------

ἔ-γδ-ιος, *ḡd-ea* (?).

ἀπό-φερσε	verrere.
-----------	----------

ὄρ-νυμι	orior.
---------	--------

ὀράω, κηπ-οῦρος	}	vereor.
(κηπο-φορος)		

ὄρρος	serum.
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ἐ-ρεύγομαι, ὀ-ρυγμός	rugio.
----------------------	--------

ῥέπω	repente.
------	----------

ἄρπάζω, ἄρπη	rapio, sarpo, sar(p)mentum.
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σὺριγξ	susurrus.
--------	-----------

ῥίζα, ῥάδιξ	rādx, radius.
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Goth. *waurts*, Eng. *wort* = *ugd*, *rād-ix*, Eng. *root* = *ug̃d*.

The Nasal
N.

Indo-European *n* is unchanged in Greek and Latin, and requires but little illustration.

ἀνεμος	animus.
γένος	gena.
ἐλνατέρες	janitrices.

Sk. *yātar*, Indo-European *ig̃ter*, so *ἐλνατέρες* = *ἐ-ιγ̃τερ-ες*.

ἡ-νέχθην, ἐνεγκεῖν, } ποδοη-νεκ-ής }	nanciscor (?).
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ἐνεγκεῖν = *ἐ-νε-νκ-εῖν*, cf. *ἐ-τε-τυ-ον*. The vowel in Latin makes the comparison doubtful; *nac-tus* rather corresponds to A.-S. *geneak*, Germ. *ge-nug*, Eng. *e-nough*.

ἐνί, ἐν, ἐν	in, in-ter.
ἐννέα	novem.
νέος, νεοσσός } (νεφοτῖος) }	novus, novicius.

Reduced root in *νῦ-ν*, *nu-n-c*.

ναῦς	navis.
ἐνος	senex, senium.
μένω	maneo.

Notice Ablaut *a* : *e*, but it is almost impossible to separate the two words.

μανία, μένος, } μέ-μν-ημαι }	Minerva, memini.
Μοῦσα (Μοντία)	mens, men-tior, moneo, Moneta.

mentiri may be connected with *μάτην* (*μῆτ-*).

νόμος, νέμω	Numa, numerus.
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Cf. *nehmen*, Engl. *nim-ble*.

νομός	nemus.
νεῦρον	nervus.
νῆμα	nemen (Inscr.).
νη-κερδής	nē-fas, ne.
νίφα	nivis.

Indo-European *snigʰh*, Eng. *snow*.

νεύω	nuo.
νυός	nurus.

Indo-European *snusó-*, Germ. *Schnur*.

νώ	nos.
οἶνη	oenus, unus.

Indo-European *m* is unchanged, but often appears with a The Nasal
prothetic vowel in Greek : M.

ἄμα sim-ul, etc. (p. 172).

For *σηm-ā* (instrumental, p. 368), *ση-l* ; cf. *μ-ᾠνυξ*, *μ-όνος*, *μ-ία* (for *σμ-ία* cf. *εἰς* for *σεμ-ς*).

ἄ-μάω mēto.

The exact relation of these words is very difficult. Can *mēto* have been approximated to *mētor*? Fick quotes a form *ἀμέω*, but gives no authority.

Φεμέω	vomo.
ἡμι-	semi-.
μαδάω	madeo.
μέμνημαι	memini.
ἄ-μαλός, μαλακός	mul-ceo, (mulier).
ἐ-μέ	me.
μειδιάω	mirari.
μέλι	mel.
μέριμνα, μάρτυς	me-mor.
μέσσος (μεθ-χος)	medius.
μήν	mensis.
μήτηρ	mater.
μίγ-νυμι	misceo (mig-sceo).
μορμύρω	murmur.
μυία (μυσ-χα)	mus-ca.
μύλη	mola.
μῦς	mus.

CHAPTER VIII.

THE SPIRANTS.

Spirants. SPIRANTS are sounds in the utterance of which the mouth channel is so far narrowed that the stream of breath sounds against the sides of the passage. They consist of
the surd dental spirant *s* and the sonant *z* ;
the palatal spirant *j*, which is to be distinguished from the consonantal *j*.

the labial spirant *v*, in Greek *f*, which cannot be distinguished from the consonantal *v*.

The dental spirant S. These hard and soft dental spirants have ordinarily but one symbol, *σ*, to represent them in Greek. This letter, however, though usually representing the hard spirant, as in *ἐστὶ*, before mediae and *μ* represents the soft spirant *z*, and as such is often replaced by the letter *ζ*, which is originally the symbol for the sound *dʒ*-, e.g. in *Ζεύς*. Thus, in inscriptions of the 4th century, we get *Πελαζγικόν*, *ψήφιζμα*, *Ζμυρναῖοι*, *πρεζβευτοῦ*, *κόζμος*, *κτίζμα*, etc.

Rhotacism. A special representative of the soft spirant is seen in the rhotacism of the Elean, Laconian, and Eretrian dialects. Thus we have the Elean *τοῖρ*, *δοτιρ* (*δοτις*), *πεπολιτευκῶρ*, the Laconian *παλεόργα* of Aristoph. *Lysistr.* 988, while Plato, *Cratyl.* 34 C adduces *σκληρότηρ* as Eretrian. This rhotacism occurs principally at the end of a word, though it is not unknown medially (v. supra and cf. *μιργῶσαι* (Hesych.) = *μιζγῶσαι*). It is not found at the beginning of a word, and at the end of a word it occurs mainly before a following vowel. The true explanation would seem to lie in a different dialectic pronunciation of the *ρ* ; but it is natural to compare it with the change of *s* to *r* in Latin between vowels.

According to Collitz, *die Verwandtschaftsverhältnisse der griechischen*

Dialekte, p. 11, this rhotacism was originally peculiar to the dialect of Elis, and thence borrowed in the later Laconian. For instances cf. Cauer, *Delectus Inscriptionum Graecarum*, nos. 6, 7, 115, 116, 138.

Osthoff (*Z. G. d. P.* p. 26) supposes that *s* passed into *ρ* through *z*. Thus we have in an inscription ἄλλοιρ for ἄλλους = ἄλλους. The change of *ov-*, *av-* before a sibilant into *oi-*, *ai-* takes place only at the end of a word under the same conditions under which there occurs a rhotacism of *s*. In *-ovs*, *-avs*, pronounced *-ovz*, *avz*, the nasal was palatalised and developed a preceding *ι* (cf. φθερ-ιω, φθειρω). Thus *-ovz* passed to *-oinz*, and this to *-oiz* and *-oir*. Compare German (p. 261).

In Latin *s* is hard at the beginning of a word and before in Latin. hard mutes and after consonants; elsewhere it is soft, and between vowels and before *m*, *n*, *v*, *g*, it passes into *r*.

This last is the law of rhotacism in Latin. We may illustrate it by the following instances:—

<i>gero</i> : <i>gestus</i> .	<i>funer-is</i> : <i>funes-tus</i> .
<i>nefarius</i> : <i>nefas</i> .	<i>dir-imo</i> : <i>dis-tineo</i> .

The date of this change from *s* to *r* between vowels is fixed by Cic. *ad Fam.* 9. 21, who says that L. Papirius, cos. B.C. 336, was the first to change his name from Papisius to Papirius.

So we get—

ver-na : Ves-ta.
veter-nus : <i>ῥέτεσ-</i> (<i>ῥέτος</i>).
Car-mena, car-men, for Casmena, Fest. 205 (?).
fur-vus : fus-cus.
Miner-va : <i>μένεσ-</i> (<i>μένος</i>).
diur-nus : nudius (tertius).
hodie-nus : dies.

A final *s* never becomes *r* in Latin by phonetic law; *arbor*, *melior*, etc. are due to the analogy of the intervocalic *s* in the oblique cases, and *honor*, *lepos* are the common forms in Cicero¹.

This fact has an important bearing on the final *-r* of the passive, which cannot therefore come from the *-s* of the reflexive.

¹ According to Madvig nouns derived from verbs never end in *-os*, but Quint. 1. 4. 13 gives *clamos*; v. Mayor *ad Cic. Phil.* 2. 6. 13.

Rhotacism has disappeared in the classical age of Latin, and consequently we get words of late formation in *-esius*, *-asius* with the spirant remaining.

The form *quirquir* of Varro, *L. L.* 7. 8 (= *quisquis*) may be a case of rhotacism in the sentence. It has been suggested that originally *quisquis* was used before a consonant, **quisquir* before a vowel, and that this last was assimilated to *quirquir* (*Mém. Soc. Ling.* vi. 50). So possibly *veter* for *vetes*, if it represents the Greek *Φέρης*.

Medial S. Medial hard *s* (I.-E. *s*) (*ks*, *gs*, written *ξ*, *x*).

ἐσ-τί	es-t.
ἐσ-θήs	ves-tis.

The initial aspirate of the word (*ἐσ* = *φες*) has been lost before that of the succeeding syllable (cf. p. 174).

βαστάζειν gesto (cf. gero) (?).

Indo-European *ges*, but we should have expected Lat. *vesto* (p. 141); cf. Eng. *cart*.

δεξιός	dex-ter.
λοξός	luxus.
κοσκυλμάτια	quisquiliae.

For σκο-σκυλ-μάτια, *squi-squiliae*; cf. σκύλλω, σκύλαξ.

μῆννος, Aeol. for **μηνσος* mensis.

ἄσρ (ἡσ-σρ) ensis (?).

ἄξων axis.

ἄξινη } ascia (with metathesis of spirant,
p. 200).

ἰξός viscus.

αὔξ-ησις aux-iliium.

ἐξ ex.

Initial S. Hard *s* at the beginning of a word is often dropped before hard mutes, nasals, and liquids. For a possible explanation see p. 203.

σχύτος scutum, obscurus.

Cf. σκιά (σκεῖα), Eng. *sky*.

σκάπτειν scabies.

ἀ-στέρ-α stella for *ster-la.

στατός status.

στίζειν (στιγχειν)	instigare, stī(g)lus, sti(g)mulus.
στίφος	stipare, stipes.
στραγγός	strangulare.
τόνος	tonare.
πάτος	spatium.

If this is correct, it will account for *p* in A.-S. *pæth*, Eng. *path*. But *πάτος* is connected by Curtius with *pons* (πῆτος), and *spatium* may be borrowed from Dor. σπάδιον, Attic στάδιον (so Curtius, *G. E.* 272, Bréal, *Mém. Soc. Ling.* vi. 3).

στρωτός, στρατός	stratus.
σπαρνός	parum.
σμερνός	mordere.
σπένδω	spondeo.
σχίζω (σχιδίω)	scindo.

Notice the aspiration in Greek after the spirant; cf. σκέλος : σχελίς, σφυρίς : σφυρίς (*sportia*), σφύγγος : σφόγγος, so perhaps Βόσφορος : Βόσπορος.

στλεγγίς	strigilis (borrowed).
σκᾶπτρον	scāpus.
(σ)μειδιάω	(s)mirare.

Cf. Eng. *smile*, *smirk*, and φιλο-μειδής = *φιλο-σμειδης. Cf. μία for σ-μία (p. 305).

Initial *s* before vowels becomes in Greek the hard breathing, *s* before vowels. in Latin remains *s*:

εὔδω	sūdum (?).
ἔδος	sedeo.
ἄρπη	sarpo.
ἐπτά	septem.
ἕξ	sex.

But here Indo-European may be *sux*; cf. Welsh *chwedd*, v. p. 369.

ἡγείσθαι	sūgīre, praesūgus.
ἔρπω	serpo.
ἔμεν (σι-σῶ-μεν)	serimus (si-sǎ-mos) (p. 237).

ἔμεν (to desire) in Homer began with a *f* and is from a different root; cf. B. 154 οἶκαδε *ἔμεν*ων (ἔμεναι), Sk. *√vi* (enjoy).

ὑς (also σὺς)	sus.
ἔπεσθαι	sequi.
ἔνος (ἐνη καὶ νέα)	senex, senium, Sk. <i>sána</i> .
ἡμι-	sēmi-, Sk. <i>sāmi-</i> .

ὑραξ	sorex (v. p. 204).
ἄλλομαι	salio.
ἄλς	sal.
ἄ-μεναι (Φ. 70)	sātur, sātis.

The tense of ἄμεναι is doubtful; cf. δ-ῃσειαν (α. 134). Greek has mostly lost the aspirate, but cf. ἄδην. Compare δδγκότες, ἄσαι (δ-ε-σαι).

ὄλος, οὖλος (Ion.)	sollus.
ἄ-πλοῦς, ἄ-παξ	sim-plex, sim-ul, sem-el.
ἐ-σπ-ετε (*σε-σπ-ετε)	in-sec-e, inquam (p. 130).
αὐθ-έν-της, ἄ-νύ-ω	sons.

δνύω = σπ-νύ-ο (Osth. Z. G. d. P. 479). Others connect sons with *prae-sens* p. 350.

ἐάω (σεφαω)	de-siv-are (= desinere, Paul. <i>Fest.</i> p. 72).
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So εἶων = ἐ-σεφ-αον (Meyer, *Gk. Gr.* § 477).

The retention of σ before vowels in Greek at the beginning of a word implies the loss of *f* after the spirant. In Latin also the second spirant is mostly lost; but where in Greek both σ and *f* are lost, in Latin we have *sz*.

σαλεύω	salum	Eng. <i>swallow</i> .
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Cf. κονίσσαλος = κωνι-σφαλός.

σειρά	sera.
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But here there is no trace of *f* in any cognate language.

σῦριγξ	susurrus	Sk. <i>svárāmi</i> (to sound).
(σαίρειν)	saltus	Eng. <i>sward</i> .
κασ-σύω	suo, sutor.	

But ἁδύς	suavis.
ἡθος	suesco.

σέβας is usually connected with *severus*, but Brugmann (*K. Z.* xxv. 302) compares Sk. *√tyaj-* (forsake), cf. σοβέω, σεμνός = *σεβνός (cf. ἄμνός, ἐρεμνός, I.-E. *ag-, reg-*). For *tj* initial = σ, cf. τῆτες, τήμερον beside old Sk. pronominal root *tyá* (Whitney, *Sk. Gr.* § 499).

Medial *s*
between
vowels.

In Greek the spirant becomes the rough breathing and disappears; where it remains it is mostly the reduction of σσ.

In Latin it becomes *r*. Nearly all cases of *s* between vowels represent an earlier *ss* after a long vowel; e.g. Cicero wrote

caussa (Quint. 1. 7. 20). In *miser*, *caesius*, and some few other cases, the origin of the word is doubtful.

<i>αὔως</i> (Aeol.)	aurora.
<i>νύός</i>	nurus.
<i>λός</i>	virus.
<i>οὔατα, ὦτα</i>	auris.
<i>μυός</i> gen.	muris.
* <i>γενεσος, γενεος, γένους</i>	generis.
<i>μουσῶν</i> (for * <i>μουσασων</i>)	musarum.

Cf. Oscan gen. plur. in *-zum*.

In cases like *φάσις* *σ* represents an original *τ*: cf. *φάτις*.
So *φασί* $\triangleq$ *φαντι*.

τύπτουσι = *τυπτοντι*.

τύπτουσα = *τυπτοντια*.

διακόσιοι, cf. *διακάτιοι* (*-κητιοι*).

έικοσι, cf. *έκατι* (*Εικητι*).

The soft spirant *z* appeared originally before a following media or aspirated media. The soft spirant *z*.

Thus I.-E. *zg*, comes in *σβέννυμι*, if related to *seg-nis* (but see p. 451).

zd comes in Lesb. *παρ-ισδω*, *ίζω*, *σιδο*, I.-E. *si-zd-o*, reduplicated from $\sqrt{\text{sed}}$ (p. 407); also in Lesb. *ῥσδος*, Att. *ῥζος*, Goth. *aste*, I.-E. *ozdos*; cf. I.-E. *nizdos*, Lat. *nidus*, Eng. *nest*. *zd* also appears in *χαμᾶζε* which goes back to *χамασде*, and in *Διόζωτος* (*θεόσδοτος*).

I.-E. *mizdhos*, Goth. *mizdō*, *μισθός*, *mīles* (*mīzdhēs*).

(*e*)*zdhí*, Zend. *zdī*, *ι-σθι*, with prothetic vowel (the imperat. of *ελμι*).

e-zgh-o-m ($\sqrt{\text{segh}}$), *ξ-σχ-ον*.

-ez-bhi, *δρ-εσφι*, *στήθ-εσφι*.

It is possible to distinguish between the semivowel *j* and the spirant *j*, but it is not possible to make any distinction between the consonantal *j* and the digamma. The old grammarians represented the sound of the digamma by *ov*, which in the historical period of the Greek language can only be the graphic representation of a diphthong. Thus *Varro*, *Felia* The Digamma.

are transliterated by *Οὐάρρων*, *Οὐελία*, and the interjections *οὐά* (*oûā*), *οὐαί*, first appearing in the Alexandrian times, represent the Latin *vah*, *vae*. The same sound appears in Aesch. *Pers.* 115 as *οά*. But this *ου* (*o*) was pronounced in the same or nearly in the same way as the labial semivowel *u*, and corresponds, according to Bentley's view, which is now almost universally adopted, to the English *u*.

Evidence
for its
existence.

The main authority for the existence of the digamma in Greek, apart from the evidence of the cognate languages, is of course the metre of the Homeric poems. After the disappearance of the sound there was a tendency to disguise its loss by the employment of alternative poetic words, and the insertion of various small particles to avoid hiatus. In spite of this, however, metrical irregularities remained which can only be explained by a restoration of the digamma (Monro, *H. G.* § 389).

Apart from the evidence of the Homeric poems, the proof of the existence of the digamma in any word rests upon its appearance in some dialectical form or in a cognate language.

Thus in Doric and Boeotian inscriptions we find *ῥέκατι* *ῤέκατι*, in Laconian *βέκατι*, which justify us in assuming an original *F* in the Attic (*F*)έικοσι. Similarly inscriptions give us *ῤεσπαρίων*, *ῤιδεῖν*, *ῤοῖδα*, *ῤίστορες*. In the famous Tables of *Heracleia* (end of fourth century, B. C.) we find *ῤέτος*, *ῤίδιος*, *ῤέξ*, but side by side with these, *έκαστος*, *έργον*, without *F*.

Written evidence for the digamma is also to be found in the inscriptions of Achaia, Argos, Corinth, Coreyra, and Crete. The Boeotians retained the *F* even after the adoption of the Ionic alphabet (cf. Monro, *H. G.* § 406).

In Quintilian and Priscian it is called the *digamma Acolicum*. The later Lesbian inscriptions, however, show no trace of the letter, and it does not seem to have been a living sound in the time of Alcaeus and Sappho, who replace it by *β*. As a sign it is vouched for by the old grammarians before initial vowels, e.g. *ῤεθεν*, *ῤοι*, *ῤε*. In some cases it has passed into letters of a similar form, e.g. *τ* and *γ*. The poetess Balbilla of Hadrian's day wrote *γοι* and *γε* for *ῤοι* and *ῤε* in her epigram in the Lesbian dialect (cf. Meyer, *Gk. Gr.* § 233,

Ahrens, I. 31). No trace of the digamma appears in the Ionic dialect of the mainland of Greece.

After the disappearance of *F* as a written symbol, the Greeks could find no nearer sound to represent the consonantal *μ* than *β*, which had at the same time to do duty for the soft labial mute. The spirant and explosive sounds met in *β* and the spirant finally prevailed. For the hardening of *μ* to *β* we can find analogies in German, where O.H.G. *swalawa* becomes *Schwalbe*, and *farawa* becomes *Farbe* (Curt. G. E. p. 572).

Thus Laconian inscriptions give *βωρσέα*, *βίδεοι*, *βοικίαρ*: *βαδύ* is Elean for *ἀδύ* in Paus. 5. 3. 2. In Hesychius we have the following glosses:

βάγος· κλάσμα ἄρτου, etc., Λάκωνες.

βείκατι· εἴκοσι, Λάκωνες.

βισχύν· ἰσχύς, Λάκωνες.

Other instances are *βιδεῖν* (*ἰδεῖν*), *ἀβέλιον* (*ἥλιον*), *αἷβετος* (*ἀετός*), *βείρακες* (*ἰέρακες*), *ἄβληρα* (*ἡνία*), cf. Homeric *εὐληρα* (*ἔ-φληρα*).

In Lesbian initial *Fρ*- is represented by *βρ*- in *βρόδον*, *βρήτωρ*, *βράκος*, and the same occurs in Laconia, Elis, and Crete.

A considerable number of Hesychian glosses show *γ* for *F*, e.g. *γαδεῖν*· χαρίσασθαι—*γάδεσθαι*· ἤδεσθαι—*γανδάνειν* beside *ἡδύς*, *√εμαδ*—*γακτός*· κλάσμα (ἄγνυμι)—*γέαρ*· ξαρ (*ver*)—*γέματα*· ἱμάτια—*γατειλαί* (*volnus*)—*γίς*· ἰσχύς (*vis*)—*γοῖδα*· οἶδα (*video*)—*γῆθια*· ἦθη (*hæscō*)—*γόρτυξ*· ὄρτυξ—*γιτέα*· ἰτέα (*viteæ*).

In some cases we seem to have *τ*, perhaps only owing to a confusion of *Γ* and *T*, or *T* and *P*.

τραγαλέον (broken)

φρήγνυμι.

τρέ (Cretan)

σέ (*the*).

To the disappearance of the *F* was in all probability due the occurrence of *υ* in the interior of a word, where *F* originally followed a vowel. Cf. *αὔρυσαν* (*ἀφέρυσαν*), *αὔιαχοι* (*ἀ-φίφαχοι*).

By this original semivowel *μ* Hartel explains the lengthening of the vowel in Homer in such cases as—

**Ἄιδος*, **Ἄιδος*, for **Αυιδος*, **Αφιδος* (Υ. 336).

δείδη, *δειδη* for **αυειδη* (P. 519).

Its representation in the Greek dialects.

Metrical value of the Digamma.

φάεα, φᾶος for *φάνεα (Π. 15).

ᾗεσα, ᾗεσα for *αῦεσα (β. 490; γ. 151).

ἀπῶερση (Φ. 283) for *ἀπουερσε.

So λείουσι may be for *λεῖουσι, *λενουσι, *λεφουσι.

Similarly the vowel *υ* represents an initial *F* in some Hesychian glosses, e.g.:—

ῥεσις· στολή (*Fέσις*, *Fεσ-θής*).

ῡάλη· σκώληξ, cf. αλόλαι εὔλαι.

Perhaps the apparent *ā* in λίνου ἀλόντε παράγρου (E. 187) is to be explained by writing λίνου ῡᾶλόντε (*Fαλόντε*).

β for *F* in
Attic.

The belief that in Attic Greek β represents an original *F* rests on a comparison of βούλομαι with *volo*, but both may be explained as beginning with a velar guttural (cf. p. 141).

βρέχω is for *μρέχω, not *Fρεχω.

βράσσω is from √*bhrat*, Latin *fretum*.

βλαστάνω from √*bhradh*, A.-S. *braut*, high (not Sanskrit *vridhhi*, etc.).

Similarly Curtius' attempts to see an original *F* in μ, ι, ο, must be regarded with suspicion.

We may now pass to the general rules of the treatment of *F* (Monro, *H. G.* § 390).

Initial *F*.

Initial *F* disappears in Greek, but is often represented by the aspirate. In Latin it is *v*. In Greek there is frequently a prothetic vowel:—

Ἔκατι (Dor.) viginti.

Ἔγνυμι vagus, cf. Engl. *wink* (?).

Ἐρίον, Ἐάρνα (*Fḡ-na*) { vellus (lāna =) Cf. *wool*.
vḡna ? }

Cf. πολύρρην = πολυ-*F*ρην.

Ἔεσθής, Ἐέν-νυμι vestis.

Cf. ἱανός (*Fεσανος*), ἀβρο-*Fείμων*, ἱμάτιον for *Fεσμάτιον*, cf. γέμματα (supra). For *εσ* = *i* cf. χίλιοι (Lesb. χέλλιοι), ἡμερος = ἔ-σμερος (De Sauss. p. 31).

Ἐσπερος vesper.

Ἐᾶρ (ἔ-*Fḡ*) vēr.

Another analysis makes ἔαρ = *Fεσḡ*, Lat. **vezr*, **verr*, vēr, which accounts better for *ē* in Latin.

Φείκω vices, vinco.

Φοῖκος vīcus.

Φεῖλύω, Φελίσσω volvo.

εἰλύω = φ-φλ-ύω.

Φελπίς, ἔΦολπα volup, voluptas.

Cf. εἰλαπίνη = ε-φλ-π-ινη.

Φέπος, Φόψ, εὐρύ-
Φοπα } vox.

Φιδεῖν, Φίστωρ, Φισ-
τορία } video.

Cf. *wit*.

Φείρω, Φερέω ver-bum.

Cf. *word*.

Φέτος (also ἔτος) vetus.

Cf. δωδεχ-ετης on an Inscription.

Φίς, Φῖνες vis.

Φοῖνος vinum.

Cf. *wine*.

Φοράω vereor.

Cf. *ward*.

ἐ-Φέργειν { vergo, urgeo (=

μorgeo ?).

Φίον viola.

Φάστν, Φεστία Vesta, verna.

{ Cf. Engl. *was*,
Sanskrit *vástu*.

ἀλώπηξ (ἀ-φλῆπηξ) vulpes.

ἀ-Φέξω, αὖξω, ὑγιής { vego, vigeo
(augeo ?).

ἀέξω, αὔξω, ὑγιής represent respectively three degrees of the root vocalization ;
cf. ἀλέξω, ἀλκή, arceo.

εὔληρα for ἐ-φληρα } lorum (for μλο-
αὔληρα for ἀ-φληρα } rum), lorica.

Φελάνη, Φαλέα Vulcanus.

ῥῆλις, ῥαλις vallis.

ῥῆλος vallus.

Notice also ἐννοσίγαιος, εἰννοσίφυλλος for ἐν-φοσι- root φοθ-
in Φωθέω, ἔΦωσα.

Medial *F* disappears in Greek or is represented by *v* Medial *f*.

coalescing with another vowel into a diphthong; in Latin it is *v*.

Δι <i>Fl</i>	Jovi (<i>Dieu</i>), p. 347.
βο <i>F</i> ός,	bovis.
ἐν-νέ <i>F</i> α	novem.
νέ <i>F</i> ος (cf. νειός)	novus.
λο <i>F</i> -	lavo (p. 86).
κο <i>F</i> εῖν, ἀ-κού-ω	caveo.
κό <i>F</i> ιλος (Aeol.), κό <i>F</i> ος	cavus.
ἐ <i>F</i> ός, τε <i>F</i> ός	{ Old Latin sovos, tonus, suus, tuus, (p. 88).
ῆ- <i>F</i> ίθε <i>F</i> ος	
	viduus for νίδομος (p. 187).

f coales-
cing into a
diphthong.

The spirant has coalesced into a diphthong in:—

ἀνέρυσαν for (ἀνα)-*F*έρυσαν, cf. ἀπό-*F*ερσε.

αὐλαχοι for ἀ-*F*ι-*F*αχοι, cf. λαγή (*F*ι*F*αχη).

ταλαύριμος for ταλα-*F*ριμος, cf. *F*ρίον.

καλαῦρονψ for καλα-*F*ρονψ, cf. *F*ρόπαλον.

εὔαδε for ἐ-σ*F*αδε, cf. ἄδύς, suāvis, suadeo.

Cf. Aeolic ἀνώς, δεύομαι, ναῦος, etc.

Initial *sz*.

With initial *sz* (*sf*) the *F* is always lost in Greek, and sometimes *σ* too. In Latin we get sometimes *s*, sometimes *su*.

(*sf*) ἄδύς, suavis, suadeo, cf. *sweet*. { Cf. savium beside
suavium (p. 204).

ῥαξ for σ*F*έραξ, sorex.

ἴδος for σ*F*ειδος, sūdor from **sz*eidor, *soidor.

So in Latin we have—

sordidus and suasum, English *swart*.

soror, Sanskrit *svásar*, German *Schwester*.

suesco, sodalis; cf. ἔθος (*σF*εθος).

On the other hand the second spirant has completely disappeared both in Greek and Latin in—

σάλος	salum.	Cf. <i>swallow</i> .
σειρά	sera, sero.	
ξ (<i>σF</i> ε)	se.	{ (Cf. p. 355 for this root.)
ξξ, Doric <i>F</i> έξ	sex,	
		Welsh <i>chwech</i> .

Medial *v* between two vowels is often lost in Latin, as in *amasse* for *amavisse*.

The palatal spirant *j* can be distinguished from the semi-vowel *ȝ* by the form it takes in Greek. An initial Indo-European *j* is in Greek represented by ζ, while an initial *ȝ* becomes the spiritus asper, sometimes changed to spiritus lenis. In Latin both *ȝ* and *j* become *j* (*i*), in Sanskrit both are *y*. The palatal spirant *j*.

Compare, e. g. :—

ἡπαρ, jecur, Sanskrit *yákrt*, Indo-European *ǵēqr(t)*.

ἐλνάρεες, janitricæ, Sanskrit *yátar*, Indo-European *ǵǵter-*,
with—

ζυγόν, jugum, Sanskrit *yuga*, Indo-European *jug*.

ζύμη, ζέω, jus, Sanskrit *yusā*, Indo-European *jus*.

A medial *j* may occur in σέω (*ǵjeu*), σέβομαι (*ǵtjeg*, σέπτως = Sanskrit *tyaktás*, p. 164).

But the combination *ǵȝ* is not distinguished in Greek from *j*; cf. dialectic forms κάρζα (καρδία), ζα (ζάπυρος, etc. = *διάπυρος), Ζόννυρος (Δίονυρος).

Thus *Dǵéús*, Sanskrit *dyāús* = Ζεύς, dialectic Δεύς, Cretan Τήνα. Compare Latin *Mezentius* (**Medientius*, an Etruscan word), and the late *zaconus*, *zabolus* (*diaconus*, *diabolus*).

The spiritus asper appears in Greek as the representative of a lost spirant *s*, *f* or *j*. But from the earliest times this representation by the rough breathing wavered, and in old Attic inscriptions we get *ὀ*, *ῆς*, *ὄπως*, *ἐκαστος* as well as the aspirated forms. The sign of the guttural spirant was, as we have seen, in the earliest times Ξ, but in the Ionic alphabet this symbol was given the value of an *e*-sound (p. 52). When the Ionic alphabet was adopted in Attica, the sign for *h* was dropped, and the spiritus asper accordingly no longer stood upon the same level as the other consonants. But we must not therefore conclude that the distinction between the rough and smooth breathing before vowels was lost. In the cities of Magna Graecia the sign ῑ was still used to represent the rough Spiritus
Lenis and
Asper.

breathing, and was thence adopted by the Alexandrian grammarians to represent a living sound in Greek speech. But the Ionians bear witness to a dialectic weakness of distinction between the two sounds, since they do not aspirate a preceding tenuis before an aspirated vowel in cases of elision, but write, e.g. ἀπ' οὔ, κάτοδος, etc. In the earliest times we have traces of the beginning of the loss of the aspirate sound in the so-called ψίλωσις of the Ionian and Lesbian dialects in contrast with the δασύτης of the Athenians. Homer, for instance, has ἦδος but ἦδος, οὔλος but ὄλος. At a later date the tendency to deaspiration increased till it reached its completion in the language of modern Greece.

In the Indo-European language *h* is not to be regarded as a sound requiring a separate symbol, but only as a form of the introductory breathing.

In Greek it stood for:—

(1) An original *s* in—

ὀ, ἄ, Sanskrit *sá*.

ὀ-, ἄ-, ἄ-, Sanskrit *sá*, *sam* (*ση*).

The prefix *ση-* (together) appears as *ǎ-* with a smooth breathing in ἄ-δελφός, ἄ-λοχος, less often as *ὀ-* in ὀ-πατρος, ὀ-ζυξ: as *ἄ-* with the rough breathing in ἄ-πλοῦς, ἄ-παξ, Latin *sim-plex*.

Compare *αῶω*, *αῦω*, *αὐστηρός*, Anglo-Saxon *séar*, English *sere*.

ξ, οὔ, οἶ	(cf. σφέ)	suus, se.
ἱμάς	Sanskrit <i>sīmān</i> .	
ῥει	Sanskrit <i>√su</i> .	
ἔδος		sedeo.
ἄρπη		sarpo.
ἐπτά		septem.
ἔρπω		serpo.
ἔνος		senex.
ἥμι-		semi-.

(2) An original *F* in—

ἐκών	Sanskrit <i>√vac</i> .	
ἦλος		vallus.

ἐννυμι	vestis.
ἔσπερος	vesper.
ἑστία	Vesta.

In other cases the *F* is represented before vowels by the spiritus lenis, e. g., εἰκω, οἶκος, ἔργον (p. 168).

(3) An original *ī* in—

ὄς	Sanskrit <i>yás</i> .
ὕμην	<i>syúman</i> .
ὕσμίνη	<i>yudh</i> .
ἦπαρ	<i>yákr̥t</i> .
ὕμεις	<i>yusmán</i> .

Before an initial *υ* the aspirate regularly appears, even where there was no initial consonant, e. g.—

ὕδωρ	Sanskrit <i>udán</i> .
ὕπό	Sanskrit <i>úpa</i> .
ὕπερ	Sanskrit <i>upári</i> .
ὔστερος	Sanskrit <i>úttara</i> .

The rough breathing was eventually lost in these as in other cases.

Sometimes the influence of analogy has led to the appearance of inorganic aspirates. Thus in the Heracleian Tables we find ὀκτώ, ἐννέα, etc., on the analogy of ἐπτά: ἡμεῖς, Doric ἀμές, as against Lesbian ἄμμες, are due to the analogy of ὑμεῖς, ὑμέες.

ἦσται, Sanskrit *áste*, is on the analogy of ἔξομαι, *√sed*.

ἀλκύν beside *alcedo* is due to a popular etymology from ἄλς. Thus Aristotle relates that the kingfisher builds its nest on the seashore. (Cf. 'A Year with the Birds,' by an Oxford Tutor, p. 174.)

Again we have Attic ἱερός, but in the dialects ἰαρός, ἐπίαρος.

ἱέραξ is found beside the older ἱρηξ.

ἵππος, Sanskrit *áśva*, equus, but Ἴππομέδων, Λεύκ-ἵππος.

ἡγεῖσθαι, but ἄγω, Ἀγησίλαος (?).

ἥλιος, Epic ἡέλιος. Cf. ἀντ-ἥλιος (Aesch. Ag. 519, etc.).

ἄπτω, but *apere, aptus.

ἔως, but ἡώς, Doric ἀώς.

ἀνύω, later ἀνύω, Sanskrit *sanóti* (he wins). Cf. ἀνθ-
έν-της.

ἔξω, but ἔχω, though on inscriptions we find ἔχω, καθ-
έχει.

Osthoff's
theory of
dissimila-
tion.

An attempt has been made by Osthoff (*Z. G. d. P.* 478) to reduce this variation to some system. There is a law common to Sanskrit and Greek, known as Grassmann's law, which forbids a root to begin and end with an aspirate. Thus Indo-European $\sqrt{bheugh}$ is Sanskrit $\sqrt{budh}$, Greek $\sqrt{\nu\theta}$. Indo-European $\sqrt{dhugh}$ is Sanskrit $\sqrt{duh}$, Greek $\sqrt{\theta\nu\gamma}$ in *θυγάτηρ*. But where the final aspirate loses its aspiration the initial consonant in a few roots both in Greek and Sanskrit is aspirated (Whitney, *Sk. Gr.* § 155). Thus, Sanskrit $\sqrt{budh}$, deriv. *bu-bhūt-sā*, Greek *τρέφω*, fut. *θρέψω*. By an extension of this law in Greek two aspirated consonants are not allowed in a single word; thus *λυθη-θι* (cf. *ισ-θι*) becomes *λύθητι*. Now in Greek we find *αὔω*, *αὔαίνω*, *αὔος*, *αὔαλέος*, as well as *αὔσω*, *αὔσαι*, *αὔστηρός*. So also *ἔχω*, *ἴχω*, and *ἔξω*—*ἔδεθλον*, *ἔδαφος* and *ἔδος*, *ἔδρα*, *ἔζομαι*, *ἴζω*, *ιδρύω*. The explanation of these variations is to be found, according to Osthoff, in the Greek law of the dissimilation of breathings. Even where *σ* between two vowels passed into an aspirate as a step towards its disappearance, this aspirate is to be regarded as a factor in the process of dissimilation. So then *αὔηω* is to *αὔσω* as *ἔχω* to *ἔξω*, and as *τρέφω* to *θρέψω*. But a desire for uniformity interfered with this relation, and so on the analogy of *αὔω*, *αὔος* we have *αὔσω*, *αὔσαι*, though, before this change was completed, the original *αὔσω*, *αὔσαι* were able to give rise to *αὔω*, *αὔος*.

The change of original intervocalic *σ* to *h* enables us to explain other apparently sporadic instances of the representation in Greek of an original *σ*. Thus we may explain *ἴδος* by the side of *ιδρώς* by supposing an original inflexion *hfidōs* (Indo-European *squid-*), gen. *Fidehos*, and similarly *ἔδος*, gen. *έδεhos*. Not more than one aspirate being allowed in a single word, the initial aspirate of the genitive drops before the following

intervocalic *h* originating from *σ*, and then the desire for uniformity leads to the adoption of the smooth breathing in the other cases as well. Then from *ἴδος* comes *ἰδῶ*, from *ἰδρῶς*, *ἰδρόω*.

Similarly we find in Homer *ἀνεται* (K. 251), *ἀνοίτο* beside the Attic *ἀνύω* which is vouched for by Herodian and appears in inscriptions. According to this rule we should have:—

<i>ἀνομαι</i>	<i>ἀνεῆαι</i>	<i>ἀνεται.</i>
So too—		
<i>ἐπομαι</i>	<i>ἐπεῆαι</i>	<i>ἐπεται.</i>
<i>ἐζομαι</i>	<i>ἐξεῆαι</i>	<i>ἐξεται.</i>

If *ἰημι* (*zero*) comes from an original *śisemi* (p. 399) the present should show the spiritus lenis, for *śisēmi* = *ισημι*, *ἰημι*, *ἰημι*: but the aspirate has been extended to the present from other forms such as *ῆ-σω*, *εἶναι*, (*ἐ-φεναι*), *ῆ-μα*.

The prefix *ση* which appears with the rough breathing in *ᾄ-πας* = *ση-πανς*, etc., appears with a smooth breathing before a following aspirate in *ᾄ-λοχος*, *ᾄ-κόλουθος*, *ᾄ-δελφός*: and by analogy this unaspirated *ᾄ* has been extended to words like *ᾄ-πεδος*, *ᾄ-γάλαξ*, *ᾄ-γάλακτος*, where there is no following aspirate. This *a* has of course nothing to do with the *a privativum* (= *η*) in e.g. *ᾄ-θάνατος*.

In some cases *ᾄ* is irregularly aspirated before a following aspirate, e.g. *ᾄ-θρόος*, beside *ᾄ-θρόος*, *ᾄθροίζω*. Compare *ᾄμόθεν*, *ᾄμόθι* (Indo-European *ση*), but *ᾄμοῦ* (a genitive form = *σημῶ-σις*, *ᾄμόθις*, *ᾄμοῦ*). *ᾄμῆ*, *ᾄμῶς*, *ᾄμοῖ*, *ᾄμα* are regular.

The enquiry into the alternation of the smooth and rough breathings is made more difficult by the *ψίλωσις* of certain dialects, such as the Lesbian and the Asiatic Ionic, the latter of which is represented in the poems of Homer and in the words borrowed thence for later poetic diction. *ῆδος*, for instance, in place of *ῆδος* (cf. *ῆδύς*, *ῆδομαι*) is almost purely poetic and Homeric, and is to be regarded as an Ionicism, like *οὔλος*, *οὔρος*, *ῆμαρ* beside Attic *ὄλος*, *ὄρος*, *ἡμέρα*. So too the *ᾄ* representing Indo-European *ση* does not always obey the law in Homer; beside *ᾄ-δελφός*, *ᾄ-θρόος*, we have the irregular *ᾄ-κοίτις*, *ᾄ-κοίτης*, *ᾄ-τάλαντος*, which are instances of

Ionic *ψίλωσις*, borrowed in the later poetic usage of epic and tragic writers. Other instances are Homeric *ἄμυδις*, *ἄμαξα*, but Attic *ἄμαξα*.

This explanation is only put forward by Osthoff as a tentative hypothesis, and, however ingenious, it must be admitted that it is hard to reconcile with the facts of early poetic diction. Its merit is that it provides an explanation for a variation in usage which otherwise appears to be purely sporadic.

H in Latin. *H* in Latin is the regular representative of an Indo-European *gh*, *ǵh*, and perhaps *bh*, *dh* at the beginning of a word.

Medially between vowels it is commonly lost, and so we have *vemens* and *vehemens*; *nil* and *nihil*; *prendo*, *probeo*, *praebeo* and *prehendo*, *prohibeo*, etc. Compare too:—

meio for meihjo, Greek *δμυχῆιν*.

aio for ahjo, Greek *ἤχ-αυε*.

nivis for nihuis, Greek *νίφα*.

brevis for brehuis, Greek *βραχύς* (p. 109).

For *h* interchanging with *f* cf. p. 143.

Owing to the extreme instability of the sound, it is sometimes entirely lost, as in *anser*, which a comparison of Greek *χῆν*, English *gander*, shows ought to be written **hanser*. It is very frequently dropped in inscriptions (Corssen, *Ausprache*, i. 52). Elsewhere it appears where there is no etymological ground for it, as in *haurio*, Greek *ἐξαῦσαι* (Hesych.), Old North. *ausa*. So *Hister*: **Ιστρος*.

In Greek words:—

helops (Quint. 5. 10. 21) : *ἑλοψ*.

hebenum : *ἕβενος*.

hibiscus : *ἱβισκος*.

Similarly *arena* : *harena*; *edera* : *hedera*; *haruspex* : *aruspex* interchange with one another (Corss. i. c. 50).

In *aheneus*, the *h* is merely a device for avoiding the hiatus; such a device being common in the Italian dialects. *Aheneus*, *ahenus* is given as the correct spelling in Gell. 2. 3. He gives

there instances of the tendency to aspirate irrationally in later Latin, e.g. *honus*, *honustus*, *lachrumas*, *sepulchrum*. Compare the well-known epigram in Catullus 84, and Quint. 1. 5. 20; Cic. *Or.* 48. 160.

H has disappeared as a sound in the Romance languages and in Modern Greek.

CHAPTER IX.

COMBINATIONS OF SOUNDS.

Combina-
tions of
Sounds.

HITHERTO we have contented ourselves with a comparison of the single sounds and their changes in the Greek and Latin languages.. It now remains to deal with the combinations of sounds in those languages. To some extent this subject has been touched upon in treating of Diphthongs. Diphthongs are composed of sounds originally distinct, which in course of time were uttered in a single emission of the breath. Some of them are original while others are the result of subsequent change in the interior of a word. With these phenomena we have already dealt, and can now proceed to other relations in which the different parts of a word or syllable can stand to one another.

Con-
traction.

By contraction we understand the union of two separate sounds, vowel or sonant, which are immediate neighbours, into a sound pronounced in a single emission of the breath. The result is either a simple long vowel or else a diphthong. In the original language, as we gather from the example of Sanskrit, hiatus was not allowed where suffixes were added on to roots or word bases, but was avoided by the development of an intervening semivowel.

Thus Latin *patr-i-us*, Greek *πάτρ-ι-ος*, but Sanskrit *pít-r-īya-s* and Indo-European *patr-i̯os* and again Attic *ῥερός*, Corc. *ῥαρός*, Sanskrit *iṣ-ira-s*, Indo-European *iṣ-ṛro-s*.

On the other hand though in such formations hiatus was not admissible, yet in composition it apparently existed in the Indo-European language as in the derived languages.

In Greek contraction very frequently arose from the dis-

appearance of an intervening spirant or semivowel, e.g. φιλῶ from φιλέω from φιλε-ι-ω.

Παῖς, Homeric πᾶϊς from παῖς, has passed into a diphthong. In Homer we find proof that after the disappearance of the spirant the two vowels were for a time uttered with separate emissions of the breath. Thus in Homer κλειτός, κλείω, from the root √κλεῖ, may be scanned as trisyllabic. We have already (p. 81) given instances of diphthongs arising out of the disappearance of an intervocal spirant. In the different dialects contraction shows different degrees of completeness or incompleteness. In Pindar and Aeschylus we find τιμά-ορος: this in Attic is contracted τιμωρός. In the following instances we shall illustrate the rules of vowel combination, taking Attic as the standard, and adding the more striking deviations of other dialects from the Attic rule. For fuller details see G. Meyer (*Gk. Gr.* §§ 131-141).

Contraction of vowels of the same quality:—

α + α, whether α be long or short, become $\bar{a}$ as in λᾶς, Epic λᾶας. By crasis we have τᾶθλα, τᾶλλα.

ε + ε pass to η in Lesbian ἦχες, Doric ἀγῆται = Attic ἡγεῖται (Ar. *Lysist.* 1314). In Attic the contraction is to ει, e.g. φιλεῖ, σαφεῖς. In Homer there is often no contraction, e.g. ἀπονέεσθαι.

The Attic and Ionic ει which results from the contraction of εε is not to be regarded, any more than the ει which is the result of compensatory lengthening, as identical in sound with the genuine diphthong ει. In the same way neither the Attic and Ionic ου which results from contraction of οο nor the ου of compensatory lengthening is identical in sound with the genuine diphthong ου. The Attic ει of contraction or compensation (=close ē) was in old inscriptions represented by ε, as in ἐμι, ἐναι, κενο, for εἰμί, εἶναι, κείνο. And in the same way the ου of contraction and compensation (=close ō) is represented on old inscriptions by ο, as in δημο for δῆμου. Early Doric represented the contraction of εε by η, of οο by ω, but at a later date like Attic by ει and ου.

ε + η become η, as in Ἡρακλῆς, but in Herodotus and often in

Homer $\epsilon\eta$ is uncontracted, and so too sometimes with proper names in Attic.

$\eta + \epsilon$ become η : Homeric βασιλῆες, Attic βασιλῆς.

$o + o$ become in Ionic and Attic ou ($=\bar{u}$). They remain uncontracted, e.g. in Homeric νόος, and in the genitives which are not found in our texts, Αλόλοο, etc. (cf. Monro, *H. G.* § 98).

Doric has $-ω$ in the gen. sing. of o -stems, e.g. ἐφόρω, χωρ'ω, from the *Tables of Heraclea*. Later Doric had, like Ionic and Attic, $-ου$. In Lesbian and Boeotian we find $ω$.

Vowels of
different
quality.

Supposing there was a difference of quality between the two neighbouring vowels the contraction was either progressive as in Doric Ἀτρεῖδᾱ from Ἀτρεῖδαιο, ἐλάττους from ἐλαττο(σ)ες, or regressive as in τῶν from τα(σ)ων, γένους from γενε(σ)ος.

$a + \epsilon$ remain in Herodotus uncontracted if they come together through the loss of an intervocalic spirant, e.g. ἀέκων, ἀέθλον. In Attic $a + \epsilon$ contract to $\bar{a}$, e.g. φοιτᾶν, ὀρᾶν, etc.; ζῆν, πεινῆν, διψῆν, κμῆν, σμῆν, ψῆν are exceptions.

In Homer we sometimes find contraction, e.g. ὀρᾶται, but there is an assimilation peculiar to Homer, e.g. ἡγά-εσθε appears as ἡγάασθε, αἰτιά-εσθαι as αἰτιάασθαι. For the different forms which this Homeric assimilation takes in the contracted verbs in $-αω$ cf. Monro (*H. G.* § 55).

In Doric $a + \epsilon$ contract into η , e.g. σιγῆν, ποτῆται, but on the other hand δέλιος becomes ἄλιος, Lesbian ἄλιος, where $\bar{a}$ has absorbed ϵ .

$a + o$ appear uncontracted in Homeric ἀγήραος beside ἀγήρων. Instances of peculiar Homeric assimilation are ἡβῶντα (for ἡβά-οντα), γελῶ-οντες, ἐμνῶοντο. The Attic contraction is $ω$, e.g. τιμῶμεν, φῶς, etc. The Doric of Theocritus has contraction in $\bar{a}$, e.g. γελᾶντι (1. 90).

$\bar{a} + o$. Homer has Ἀτρεῖδᾱο as well as ἐνυμμελίω. The ηo which we should expect in Ionic and Attic appears as $\epsilon\omega$ with a metathesis of quantity. In the poets $\epsilon\omega$ is often scanned as one syllable by synizesis, and in Homer, where a vowel precedes, is actually written $ω$, e.g. Ἑρμείω. Instances of syni-

zesis are the Πηληιάδεω Ἀχιλῆος of the first line of the Iliad, χρυσέω ἀνὰ (A. 15), πολλέων ἐκ πολίων (B. 131), etc.

In Doric, Lesbian, and Boeotian *āo* is represented by *ā*, as in the gen. sing. Ἀτρεΐδᾱ of the *Tables of Heraclea*, Ἰάνων (Aesch. *Pers.* 949), γᾱμέτρᾱς (for γαο-, Attic γεω-) *Tab. Heracl.* Theocritus has *ās* (29. 20) and *tās* (30. 5) for Attic *ēws*, *tēws*. Boeotian has Λᾱδάμας for Λᾱοδάμας, Attic Λεωδάμας. In Pindar we have synizesis in τιμᾶρορος (*Ol.* 9. 84), and also in the words τετράρορον, χρυσᾶορα, Λᾱομεδοντειᾶν.

ā + *ω* become *ω*, e.g. τιμῶ, in all dialects, but the Homeric assimilation admits of ὀρόω, ἀντιόω, and also, with lengthening, of μενοινῶω (cf. *Monro, H. G.* § 55).

ā + *ω* in Doric become *ā*, e.g. Ποσειδᾶν, θεᾶν (=θεᾶων). Homer has beside *āων*, *εων* (from **ηων*), e.g. πυλέων, θυρέων (*φ.* 191).

Homeric νηῶν, Doric νῆων, becomes in Attic νεῶν. An original τεθνᾶώς, Homeric τεθνηώς is in Attic τεθνεώς. δῶς, Homeric ῆώς, in Attic appears as *ēws*, according to the rule by which long vowels were shortened before following vowels.

ε + *ᾱ* where contracted pass to *η*. Thus in the neuter plural of *s*-stems we find γένη, τείχη, εὐμενῇ, but where there is a foregoing *ε*, and generally where there is a foregoing *ι* or *υ*, *εα* becomes *ā*, e.g. ἐνδεᾶ from ἐνδεής, Περικλέᾱ, ἄκλεᾱ, and also ὑγιᾶ from ὑγιής and εὐφυᾶ as well as ὑγιῇ, εὐφυῇ. Exceptions to this rule are to be found in χρυσᾶ, δστᾶ, where the *α* of the neuter plural is preserved.

η + *ᾱ* as in Epic βασιλῆα, contracted in Τυδῇ (*Δ.* 384), appear in Attic as -εᾶ, e.g. βασιλέᾶ, βασιλεύς. In Herodotus and the dramatists the *α* may remain short after *ε*, e.g. φονέᾱ (*Eur. Hec.* 882), Πενθέᾱ (*Bacch.* 1070). By crasis we have ἐπειδάν, ἀλήθεια, τυχθαθῇ.

ε + *ο* appear sometimes as *ω* in the Doric, e.g. ἐπαινῶμεν, ὠνόμενος, etc., in Attic and later Doric as *ου*, e.g. Θουκυδίδης. The Ionic contraction was *ευ* (*p.* 84), between which sound and *εο* there was a similarity in all dialects.

η + *ο* as in Homeric βασιλῆος become in Herodotus *εο*, βασιλέος, in Attic βασιλέως with transposition of quantity. In the

tragedians this $\epsilon\omega$ was often monosyllabic, e.g. in $\pi\acute{o}\lambda\epsilon\omega\varsigma$, where the ϵ has practically become a semivowel. Original $\epsilon\omega$ is contracted ω as in $\phi\iota\lambda\tilde{\omega}\mu\epsilon\nu$ for $\phi\iota\lambda\epsilon\tilde{\omega}\mu\epsilon\nu$.

$\epsilon + \omega$ if contracted become ω , e.g. $\phi\iota\lambda\tilde{\omega}$: they are uncontracted in Attic $\nu\epsilon\tilde{\omega}\nu$, where an intervening spirant has fallen out, e.g. $\nu\acute{\alpha}\tilde{F}\tilde{\omega}\nu$, $\nu\eta\tilde{\omega}\nu$, $\nu\epsilon\tilde{\omega}\nu$.

$o + \tilde{a}$ as in Epic $\chi\rho\acute{o}\tilde{a}$, $\beta\acute{o}\tilde{a}\varsigma$. Herodotus has $\tilde{a}\mu\epsilon\tilde{\iota}\nu\omega$, but also $\delta\iota\pi\tilde{\lambda}\acute{o}\tilde{a}$. In Attic we have $\tilde{a}\kappa\eta\kappa\tilde{o}\tilde{a}$ beside $\alpha\tilde{\iota}\delta\tilde{\omega}$, $\eta\tilde{\omega}$. In $\delta\iota\pi\tilde{\lambda}\tilde{a}$ the ordinary a of the neuter ending is kept to mark the neuter plural. By crasis we have $\tilde{a}\nu\eta\rho$, but $\tilde{\omega}\rho\iota\sigma\tau\acute{o}\varsigma$ (Λ. 288) and in Herodotus $\tilde{\omega}\nu\eta\rho$. $\pi\rho\acute{o}$ - $\alpha\tau\acute{o}\varsigma$ becomes in Doric $\pi\rho\tilde{\alpha}\tau\acute{o}\varsigma$, Attic $\pi\rho\tilde{\omega}\tau\acute{o}\varsigma$.

$\omega + \tilde{a}$, e.g. $\eta\rho\tilde{\omega}\tilde{\alpha}$, $\eta\rho\tilde{\omega}\tilde{\alpha}\varsigma$, Attic $\eta\rho\omega$, $\eta\rho\omega\varsigma$. $\sigma\tilde{a}$ from $\sigma\acute{\omega}\tilde{a}$ keeps the feminine ending of nom. sing. By crasis we have $\tilde{\omega}\gamma\alpha\theta\acute{\epsilon}$, $\tilde{\omega}\nu\alpha\tilde{\zeta}$.

$o + \epsilon$ contracted ou , e.g. Epic $\gamma\omicron\nu\nu\omicron\sigma\theta\alpha\iota$, but $\beta\acute{o}\epsilon\varsigma$ both in Homer and Attic. Elsewhere Attic contracts to ou , Doric to ω , e.g. $\delta\omicron\upsilon\lambda\tilde{\omega}\tau\alpha\iota$, $\tilde{\epsilon}\lambda\tilde{\alpha}\sigma\sigma\omega\varsigma$ (Ar. *Lys.* 1260). By crasis $\tau\omicron\upsilon\tilde{\nu}\rho\acute{o}\varsigma$, but also Attic $\tilde{\alpha}\tau\epsilon\rho\acute{o}\varsigma$, $\theta\tilde{\alpha}\tau\epsilon\rho\acute{o}\nu$; but Attic $\tilde{\epsilon}\tau\epsilon\rho\acute{o}\varsigma$ is Doric $\tilde{\alpha}\tau\epsilon\rho\acute{o}\varsigma$, and this may be the form preserved in $\tilde{\alpha}\tau\epsilon\rho\acute{o}\varsigma$, $\theta\tilde{\alpha}\tau\epsilon\rho\acute{o}\nu$.

$o + \eta$ become ω , e.g. Homeric $\beta\acute{\omega}\sigma\alpha\nu\tau\iota$, $\tilde{\epsilon}\pi\iota\beta\acute{\omega}\sigma\sigma\omicron\mu\alpha\iota$ and in Herodotus $\delta\gamma\delta\acute{\omega}\kappa\omicron\nu\tau\alpha$, $\tilde{\epsilon}\nu\nu\acute{\omega}\sigma\alpha\varsigma$, $\tilde{\epsilon}\beta\acute{\omega}\theta\epsilon\omicron\nu$, but not in Attic in these words. However from verbs in $-\omicron\omega$ Attic has $\delta\eta\lambda\tilde{\omega}\tau\omicron\nu$ (= $\delta\eta\lambda\acute{o}\eta\tau\omicron\nu$), etc.

Whenever i or v was the second element in a combination of which a , ϵ or o was the first, a diphthong as already described (p. 78) was the result.

Wackernagel has ingeniously endeavoured (*K. Z.* xxix. 124) to connect the phenomena of contraction with the position of the accent. Thus where the accent rested on either of the two vowels as in $\nu\acute{\epsilon}\acute{o}\varsigma$, $\theta\epsilon\acute{o}\varsigma$ for $\nu\acute{\epsilon}\tilde{f}\acute{o}\varsigma$, $\theta\epsilon\tilde{f}\acute{o}\varsigma$, there was no contraction; where the accent followed, as in $\nu\omicron\mu\eta\nu\tilde{\eta}$, $\theta\omicron\upsilon\kappa\nu\tilde{\nu}\tilde{\iota}\delta\eta\varsigma$, contraction ensued. There are many exceptions to this rule, especially in later Greek; but the earlier we go the more support it receives. In the combination of the stems $\nu\epsilon\omicron$ - and $\mu\eta\nu\sigma$ - there is no new factor except the change of accent, and therefore to this we may refer the ou of $\nu\omicron\mu\eta\nu\tilde{\eta}$. From $ou\varsigma$ we have in Attic the gen. $\tilde{\omega}\tau\acute{o}\varsigma$, but in Homer $\tilde{o}\tilde{\nu}\tilde{\alpha}\tau\acute{o}\varsigma$. Attic has preserved the true accent, and $\tilde{\omega}\tau\acute{o}\varsigma$ is for $\tilde{o}\tilde{\nu}\tilde{\alpha}\tau\acute{o}\varsigma$ from $\tilde{o}\tilde{\nu}\tilde{\alpha}\tau\acute{o}\varsigma$. The nom. on inscriptions is written $O\tilde{\Sigma}$, Doric $*\tilde{\omega}\varsigma$ (cf. $\tilde{\alpha}\mu\tilde{\phi}\tilde{\omega}\tilde{\epsilon}\varsigma$ Theoc. 11. 32), for $\tilde{o}\tilde{\nu}\tilde{\alpha}\tau\acute{o}\varsigma$, gen. $\tilde{o}\tilde{\nu}\tilde{\alpha}\tau\acute{o}\varsigma$ (for $\tilde{o}\mu\tilde{\nu}\tilde{\eta}\tilde{\iota}\tilde{o}\tilde{\varsigma}$). Contraction does not occur where the accent precedes, as in $\tilde{\epsilon}\pi\tilde{\lambda}\epsilon\omicron\nu$, $\tilde{\eta}\tilde{\theta}\epsilon\omicron\varsigma$, and $\tilde{\epsilon}\nu\tilde{\theta}\epsilon\omicron\varsigma$ beside $\tilde{\epsilon}\nu\tilde{\theta}\omicron\nu\tilde{\sigma}\iota\tilde{\alpha}\nu$, nor does it occur where the second of the two vowels is long by nature or position as in $\tilde{\epsilon}\omega\nu\tilde{o}\tilde{\nu}\tilde{\mu}\eta\nu$, $\tilde{\epsilon}\omicron\rho\tilde{\tau}\tilde{\eta}$. In Aristophanes and the comic writers $\tilde{\pi}\tilde{\lambda}\epsilon\omicron\nu$ is the only case where the $\epsilon\iota$ of $\tilde{\pi}\tilde{\lambda}\epsilon\iota\tilde{o}\nu$ changes to ϵ . In $\tilde{\pi}\tilde{\lambda}\epsilon\iota\tilde{o}\nu$ the chief accent was on ϵ , and ι disappeared, so $\tilde{\pi}\tilde{\lambda}\epsilon\omicron\nu$, but in $\tilde{\pi}\tilde{\lambda}\epsilon\iota\tilde{o}\nu\tilde{o}\varsigma$ the chief accent was on the ι .

Hiatus is occasionally to be found in new formations such as the Epic *στήομεν*, *δώομεν*, which we assume not to be original on the ground of the hiatus. Cf. p. 178.

In compounds we have Elision in *ἰππ' - αγωγός*, *ἀπ' - άγω*, *ἐμ' - αυτόν*: but on the other hand hiatus in *προ-άγω*. An explanation of the hiatus in *πολύανδρος*, *βωτιάειρα*, *περίειμι* has been already suggested (p. 96).

Long vowels were shortened in Greek before a following semivowel combined with a mute consonant:—

Shortening
of long
vowels.

Indo-European *djēús*, Sanskrit *dyā́u-s*, Greek *Ζεύς*.

<i>gōm-s</i>	<i>gāu-s</i>	<i>boús</i> .
<i>plē</i>		<i>πλείστος</i> .
<i>plēis-</i> }		Epic <i>πλέες</i> , <i>πλέας</i> .
<i>-ōis</i>	<i>árvāis</i>	<i>ἵπποις</i> .
<i>-ēnt</i>	<i>vānt</i>	<i>ἄημι</i> , partic.
		stem <i>άέντ-</i> .

Other instances are *στόρ-νῦμι* for *στωρ-νυμι*, $\sqrt{st\bar{r}}$ -, cf. *στρωτός*, — *βόλλομαι*, Lesbian for *βολνομαι*, from *βωλ-νομαι*, Attic *βούλομαι*, $\sqrt{gl}$ —Attic *μηνός*, Lesbian *μῆννος*, from **μην-σος*, cf. Latin *mēnsis*, but in the nom. sing. beside *μήν* we have *μείς* (Pind. *Nem.* 5. 44) from *μενς* for *μηνς*.

Exceptions to this rule of shortening are to be found in later formations, e.g. *ῥᾱστος* for *ῥάιστος*.

The shortening of vowels before vowels has been mentioned in dealing with the different vowel combinations, e.g. Homeric *ἦροος* for *ἦρωος*, Herodotean *νέες*, *βασιλέος*, *ζόη* (= *ζωή*), and Attic *νεῶν*. We have also illustrated quantitative metathesis, as in *έστεῶτες* for *έστηFότες*, *τεθνεῶτες* for *τεθνηFότες*, *στέατος* for *στηFατος*, *βασιλέως* and *βασιλέα*.

The lengthening of short vowels is a common phenomenon in Greek. Thus where a double consonant is reduced to a single, a short vowel *a* is lengthened to *ā*, or *η* in Attic and Ionic:—

Lengthen-
ing of short
vowels.

Lesbian <i>στάλλā</i>	Doric <i>στάλλā</i>	Attic <i>στήλη</i> .
(<i>άλλ-άλλων</i>)	Doric <i>άλλάλων</i>	Attic <i>άλλήλων</i> .
(<i>Fallος</i>) <i>vallus</i>	Doric <i>ἄλος</i>	Attic <i>ἡλος</i> .

Lesbian ἀμμες

Doric ἀμές

ἡμεῖς.

Latin *pannus*

πήνη.

In Homer we find *κᾰλός*, Sanskrit *kalya*. The original Greek stem then was *καλ-ιο-*, and the *κᾰλός* of Homer is a Doric form which should appear in Ionic as *κηλός*. In Attic the *α* is short and there has been no compensatory lengthening. In Homer we find *ἄνεται* from *ἀνφεται* and *ἰκάνω*, *κῖχάνω*, *φθάνω*, where the length of the vowel points to a lengthening compensatory for the loss of a consonant. The compensatory lengthening of the *ᾱ* in *πανσα* to *πᾶσα* and in *ταυς* to *τᾶς* is older than the change from *ᾱ* to *η* in Attic and Ionic (cf. p. 18). Still in some instances we have *η*, e. g. in *χηνός* for *χανσος*, cf. Lat. (*h*)*anser*, *δῆνος* for *δανσος*, *ἐτεκτήναμεν* for *ἐτεκτανσαμεν*. The long vowel of the aorist of verbs in *-αωω* cannot be altogether reduced to rule, e. g. we have *ἰσχυᾶνα* beside *ἰσήμενα*.

ε is lengthened to *η*, Attic *ει*, after the disappearance of a following nasal before *σ*, e. g.—

Doric *ῆς* (*Tab. Heracl.*). Attic *εῖς* for *ἐνς*.

The participial ending *-εντς* in Attic becomes *-εις*. The prep. *εῖς* is for *ἐνς*. The form *εῖς* was originally only used before consonants.

ε was lengthened to *η* (*ει*) where of two following nasals or liquids one disappeared. The double liquid or nasal remained in the Lesbian dialect, and was the result of previous assimilation. Thus:—

*ξμενσα	Lesbian ξμεννα	Attic ξμεινα.
*μηνσος	Lesbian μῆννος	Attic μηνός.
*κτενχω	Lesbian κτέννω	Attic κτείνω.
*φθερχω	Lesbian φθέρρω	Attic φθείρω.
*χεσλιοι	Lesbian χέλλιοι	Doric χήλιοι
		Ionic χελιοι.
		Attic χίλιοι.

Other instances are *εῖνεκα*, Att. *ἐνεκα*, Lesb. *ἐννεκα*—*φαεινός* for *φαεσνός*, Lesb. *φᾰέννος*. In Homer the lengthening is not always consistent, e. g. *ἐνοσίχθων* but *εἰνοσίγαιος*, *ξείνος* as well as *ξένιος*, *εἰνεκα* and *ἐνεκα*. Sometimes the lengthening is irrational, as in *εἰλάτινος*.

The double nasal appears in the Attic ἀμφιέννυμι (Ion. εἴνυμι), κορέννυμι, κρεμάννυμι. The double liquid appears in Attic ὄρρος (ὄρσος), κόρρη (κόρση), etc.

ω (ου) arose—

(1) Where a nasal disappeared before *s* in—

Cretan τόνς,	Boeotian τώς,	Attic τούς.
Cretan ὑπάρχουσιν,	ὑπαρχώσας (Tab. Heracl.)	Attic ὑπάρχουσα.
(μουν-)	Boeotian μῶσα,	Attic μούσα.

(2) Where a double consonant which was the result of assimilation was reduced to one:—

γονF-	γουν-	Epic γουνός	Attic γόναρα.
κορFa	κορρ-	Doric κῶρα	Epic κούρη Attic κόρη.
δλF-	δλλ-	Epic οὔλος	Attic ὄλος.
δρF-	δρρ-	Epic οὔρος	Attic ὄρος.
δορF-	δορρ-	Epic δουρός	Attic δορός.
βoλν-	Lesbian βόλλεται	{ Attic βού- λεται.	
δρF-	Lesbian ὄρρανός	Doric ὠρανός	Attic οὔρανός.

The Latin diphthongs proper have been already treated of, p. 85. What follows is to some extent a repetition of what has been said there.

A. Contraction results in most cases from the loss of an intervocalic *i*. Thus *stō* is from *stā-i-o*, *trēs* from *treies*, Sanskrit *tráyasa*, *aes* from *aies*, etc. So in inflexion *monēte* from *moneiēte*, Sanskrit *mānáyata*, *amēs* from *amā-iē-s* (cf. *cap-iē-s*).

But *eō*, *eā*, *io* remain uncontracted; *mone(i)o*, *mone(i)am*, *audi(i)o*. So also *aé* remains uncontracted where the second vowel carries the accent; cf. *aé(s)nus* by the side of *éris*, Sanskrit *áyasa*.

In some cases we get contraction after the loss of intervocalic *h*, *bīmus* for *bi-himus*, *nēmo* for *nehemo*, *via* for *vehia*.

Contraction by loss of intervocalic *v* occurs in *amaram*: *amaveram*, etc.

In composition a short vowel is elided before a long, e.g. *nullus* for *ne-ūllus*, *noenum* for *ne-oenum*. But a short vowel unaccented contracts with a preceding vowel, *copia* for *cóopia*,

Vowel
combina-
tion in
Latin.
Contraction.

dēgo for *dēago*; contrast *coāctus*, *coāgulum*. *Coagito*, *coalesco* are new formations (cf. *cōgito*).

Cæpi beside Lucretian *coēpi* owes its contraction to the accent of *coepīsti*, *coeperāmus*, etc. (*Z. G. d. P.* 158).

Shortening
of long
vowels.

B. *Shortening of long vowels*. This takes place before a semivowel, liquid, or nasal followed by a consonant, e. g. *nū-fragus* from *nāx-*, *clāudo* (cf. *κληφίς*), *gāudeo* (cf. *gāvisus*), *vēntus* from *uēntus* (cf. *ἀ-φεντ-*).

A long vowel before another is also regularly shortened in Latin, e. g. *nēo* (for *nēio*, cf. *νή-θω*), *rēi*, *fidēi*. In genitives of the 5th declension the *e* only remains long apparently when preceded by *i*, e. g. *dīēi*. The quantity of these genitives in prose is doubtful; in poetry the short vowel or a contracted form tends to prevail. Compare also *illius*, etc. for *illius*.

For cases like *lītera* by the side of *littera*, see p. 206.

Lengthen-
ing of
short
vowels.

C. *Lengthening of short vowels*. All vowels were pronounced long in Latin before *ns*, *nf*, *gn*, *gm*, e. g. *cōnsul*, *infelix*, *dignus*, *āgmen*; cf. *Cic. Or.* 48. 159.

For cases of a long vowel in such combinations with a following consonant lost cf. p. 213.

Combina-
tion of
Vowels
and Semi-
vowels.

We may now consider the relation borne by some of the Latin diphthongs to those of the original Indo-European language.

Indo-European *eu* becomes in Latin *ou*, in—

εὐάξω : ovare. *ἐννέφα* : novem.

νέφος : novus. *χέφια* : fovea.

ἐ-ρεύθ-ω : rōbigo, for roubigo. *ἀ-μεύ-σασθαι*, moveo.

Indo-
European
eu.

So Old Latin *tovos* = *τεφός*, *sovos* = *έφός*. It is possible that *suus*, *tuus* are not variations of these, but represent an original double form, answering to the Greek *ός*, *σός*, the difference between the two being connected with the difference of sentence-accent (*Mém. Soc. Ling.* vi. 20, n.). *τεός*, *έός*, *tovos*, *sovos* are the orthotone, *σός*, *ός*, *tuus*, *suus* (cf. *tis*, *sos*, *sas*, *sis*, *Fest.* 301, *Neue*, ii. 189) the enclitic forms.

This *ou* from an original *eu* remains unchanged before vowels in accented syllables; before consonants it becomes *ū*, e. g. *dūco* (cf. *ἀ-δευκής*), *nūper*, *nun-dinae*, *mūto* (beside *moveo*), *jūglans* (*Jov-is*), *jūgera* (*ζεύγε(σ)α*), *Lūcius* (*Λεύκιος*). *Mōtare*,

nōnus, must therefore be supposed to be later forms for older *mūlare*, **nūnus*.

In unaccented syllables the *ou* becomes *ū* before vowels in *dēnūo* (*novus*), *mōnūi* (*mone-ūi*), *ābnuo* (*veūo*). In this case *plūo* (cf. *perplovere*), *ruo*, *fluo* (cf. *fluvius*), as compared with *πλέρω*, *ρέρω*, *φλέρω*, must be supposed to owe their short vowel to the influence of the compound forms; cf. *ānnuo* : *veūo*.

It follows, therefore, that *eu* in *brevis*, *levis* cannot be original; rather it goes back to *-gghu-* in *βραχύς*, *ἐλαχύς*.

On the other hand, *ou* in Latin is always secondary, representing Indo-European *eu*, never Indo-European *ou*; *boves*, therefore, cannot directly represent *βόφες*, but must be borrowed either from the Greek or from some Italian dialect. This is further confirmed by the fact that the initial *b* cannot be the direct Latin representative of the Indo-European velar guttural.

In the case of *ovis* there is some confusion. Indo-European *ou*, as we shall see, regularly becomes in Latin *au*. Therefore with *ōfis* we must put, not *ovis*, but *avilla* and *arena*. But the Latin *avis* corresponds to the Greek *ἀφι-ερός*, so that as *avis* already existed in the sense of 'a bird,' we must suppose that *ovis* was used for the more correct *avis* for the sake of clearness in the sense of 'a sheep,' unless indeed *ovis* too, like *bos*, is borrowed. It is also conceivable that *ovis* instead of *avis* may be due to the analogy of *bovis*. But there is the same confusion between *au* and *ou* in Greek, as we get *οἰωνός*, *φόν*, and perhaps *οἶομαι* (an augural term originally, cf. *autumo* = *av-tumo*) beside *αἰερός*, so the confusion may be Indo-European.

The *ou* of *bovis*, *ovis* becomes *ō* or *ū* before consonants in *bōbus*, *būbus*, *būbulcus*, *ōpilio*, *ūpilio* (cf. *μῶlare* : *mūlare*).

Indo-European *ōu* is Latin *au* in—

λούω, *lavo*.

οἶομαι, *autumo*.

κοέω, *caveo*.

αἶς, *avilla*.

οὔς, *auris*.

πτοέω, *paveo*.

Indo-European
ou.

This explains the much disputed *gravis* beside *βαρύς*. The original form was *grus*, which would regularly become in Latin **vorvis* as *grijo* became *venio*. But *gorvis* became by metathesis *grovis*, before the initial velar became *v*, and then was

regularly changed to *gravis*, the *g* becoming *g* before a following consonant (p. 139). Latin *au* before a consonant became *ō*, e. g. *lomentum* (*lavo*), *lotus*, *oricilla* (*auris*). The *au* in *lautus*, *autumo*, etc., may be midway between *ou* and *ō*; *auspicor* is etymologically less correct, and due to assimilation with *avis*. So *cōda*, *ōsculum*, *cōtes* is the correct spelling. In *clāstrum* the *a* is perhaps long; cf. *clāvis*.

Other instances of Indo-European *ov* becoming Latin *av* are—

octāvus for **octōvus*, cf. Sanskrit *aṣṭāu* (a by-form with *aṣṭa*). In this case the *ōv* is long. (*K. Z.* xxviii. 154.)

faveo for **foveo*, the causative of *√bheu-*, *bhou-*, with the regular degree of the root; cf. 'di faveant ut,' etc.

cavus beside *cohūm* (i. e. *coūm*), *κοῖλος*. The *u*, it would seem, is kept in inflexion before *a* and *i*, not before *o*, precisely as is the case in *ecus* beside *equa*, *equi*. Then the original inflexion would be *coūs*, gen. *cari*, which produces on the one hand *cavus*, on the other hand *co(h)um*.

On the same principle we should get originally *Gnaeus*, gen. *Gnaivi*, which would account for the double form *Gnaivos* beside *Gnaeus*. So *Gaius*, but Oscan *Gaaviis*. And again a type *deius*, *deivi* would produce (i) *deus*, (ii) *divus*. Perhaps we may explain in the same way the double form of the borrowed words *olea* : *oliva*—*Achaei* : *Achivi*—*musaeus* : *musivus*.

It is possible that the group *o* + consonant + *v* becomes *a* + consonant + *v*, the *ov* becoming *av* even when a consonant intervenes. This would explain *valvae* beside *volvo* (for **velvo*, *ῥελύω*); *salvus* beside *ōlos* (*όλφος*, cf. *οὔλος*).

Sollus may belong here. It is identical with *sōlus*, and the long *ō* may be explained perhaps by the loss of the following semivowel (*solḡos*); cf. *āb-icio* for *ab-īcio*. (But for instances of double forms of words, one with long vowel followed by a single consonant, the other with short vowel and double consonant, see p. 208.) The old inflexion might be *sollus*, *salvi*, **sollo*, *salva*, etc., whence (i) *sollus*, (ii) *salvus*. From *salvi* come *salvere*, *salvare*, *salus*, *salve* (cf. *οὔλε*), from *sollus*, *sōlari* and perhaps *sōlere*.

Sollemnis cannot be from *sollus* and *annus*, as this will not account for the *m*. The word would seem to be a participial form from **sollere*, perhaps originally **solle-mnios*, passing to the *I*-stems (cf. p. 293).

Another instance is *vocivus*, *vocatio*, *vocuus* beside *vacivus*, *vacuus* (*vanus* for *vac-nus*?). The original root may be *vec-* in *ἑκ-ών*; cf. *vacare negotio*.

In medial syllables *ũ* represents an originally unaccented *eu* or *ay* before a vowel, in e.g. *dénno*, *ábnno*, *mónni*, *áblui*.

So Havet ingeniously suggests that *patruus* may be for **pátravus*, comparing the derivation of *avunculus*, and *nepos*, which is 'nephew' as well as 'grandson.'

Before *i* followed by a vowel *ou*, *au* become *uĩ* in *diluvium*, *terripuvium*, *depuvio*.

ũ represents an unaccented *au*, *eu*, *ou* before a consonant, e.g. in *cónclũdo* beside *claudio*, *accũso*, *dẽfrũdo*, *póllutus*.

Hence it follows that *foveo*, e.g. is from a root *feu-*, *favilla*, *favonius* from *fou-*, but *fōmes* may come from *feu* (as *mōmentum*) or *fou* (as *lōtus*). Another root *feu-* (*gheu-*?) gives *fovea*; another root *fou-*, *faviassa*. Finally, for *fraus* beside *frustra*, we may compare *ῥόος* beside *ῥέω*, if it is *frũstra* (for **freustra*), or *ῥόος* beside *ῥυτός* if *frũstra*; again, *χύσις* : *χολή* corresponds to *fu-n-do*, *con-fũ-tare* : *fũvus*.

The combination *uẽl* becomes *uol* (*ol*, *ul*) except before *i* or Indo-European *ẽl*. The same may be true of *uẽm*, *uẽn*, and perhaps *uẽr*. Thus

volo, volt, volumus, but velle, vellem, velis.	
ulcus, vol-nus	ἑλκος, vello.
voluptas	ἑλπίς.
colo (<i>quelo</i>)	in-quil-inus, es-quiliae.
	(Cf. <i>stercus</i> : <i>sterquilinium</i> .)
volvo	ἑλύνω.
vomo	ἑμέω.
urgeo	ἑ-ἑργ-ειν. Sanskrit <i>√vrj</i> (twist).

Vergo is strictly a vulgarism; cf. *vertex* : *vortex* (!).

duonus, bonus	bene.
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And generally *el* becomes Latin *ol* (*ul*), except under the conditions given above (except initial *cel*, *gel*, in *celer*, *gelu*, etc.).

soluo for *se-luo*.

sulva (sic) : ὕλη (*σφελη*).

pullus : πελιός.

avunculus : O. H. G. *eninchil*.

scopulus : σκόπελος.

olea (borrowed) : ἐλαία.

catapulta (borrowed) : καταπέλτης.

But *uo* is again changed to *ue* in *vester* (*voster*), *vesci* (βόσκεισθαι), *verbum*, *verbera*, *vespa*, *vermis*, *verto* (*vorto*), *ve(s)num* (ῥνος = *Foivos*), **veicus* (*Foikos*), **veinum* (*Foivos*), etc. (*Mém. Soc. Ling.* vi. 21.)

Vowel-
change not
due to
Ablaut.

Further vowel changes not depending on any definite combination, nor any Ablaut of inflexion, but more vaguely due to neighbouring consonants and vowels, are as follows—

In accented syllables *u* becomes *i* in *silva*, *libet* (also *lubet*), but the *u* tends to be kept in such cases in accented syllables. Cf. *s-ũ-mus*, *tũnet* beside *máxĩmus*.

In syllables before the accent we get *ũ* varying with *õ* in *ũpilio* and *õpilio*. Cf. *mõtare* and *mũtare* (p. 89).

And *õ* varying with *ũ*, *ũ* with *ĩ* in *adolẽscens* (said to be the participle) beside *adulẽscens* (substantive), *monumẽntum* beside *monimẽntum*.

In syllables after the accent, other than final, a short vowel appears as

(i) *e* before *r*, double consonants and single vowels, and after *i*, but elsewhere becomes *ĩ*.

leg-e-ris : *leg-i-tur*.

talẽntum : τάλαντον (the Greek accent was here preserved or we should have *talántum*).

abi-e-tis, *cav-e-a*, *pi-e-tas* (cf. *bon-i-tas*).

pario, *pepẽri* but *cado*, *cecĩdi*.

cognomentum but *nóminis*.

But in many cases the analogy of kindred forms comes in, *Cáesãris*, *fũlgũris*, *mẽmõris*, *lẽvĩrum* (on analogy of *vĩrum*), *satura* (*atur*), *dẽcoris* (*decõs*).

(ii) *ø* (*u*) after *e*, *i*, *u* and before *l*.

parvulus, *alveolus*, *pessulus* (πάσσαλος), *paenula* (φαινόλη).

(iii) *u* passing into *i* (*ü*) before *b*, *p*, *f*, *m*.

gradubus (*gradibus*), *coluber*, *optumus* (*optimus*), *legimus* (cf. λέγω-μεν), *pontufex* (*pontifex*).

(iv) Elsewhere a short vowel becomes *ǐ*, as in *gen-i-tus*, *machina* (μηχανή); *juvenis* has *en* from *juventus*.

We may notice the variation of *ǐ* : *ǣ*, the former appearing before double, the latter before single consonants; *judex*, *judicis*, *genetrix*, *genitor*, etc.

In *veg-ǣ-tus*, *heb-ǣ-tis*, *seg-ǣ-tis* the analogy of the allied forms comes in.

In composition, the accent, roughly speaking, was originally on the first element, and the subsequent unaccented vowels are treated in accordance with the rules given above. Thus we have *aequip̄ero*, *cōnscendo*, *occupo*, *cōtubernium*, *sūbrupio* (in Plautus, becoming *subrūpio* and *surripio*), *efficio*. Cf. *igitur*, the enclitic form of *agitur* (cf. p. 285).

But these laws are often crossed by the influence of the analogy of the uncompounded or cognate forms. The result of the combination of both influences may be stated thus—

ǣ becomes *ǣ* before two consonants and before *r*, but also often before one consonant, perhaps by analogy. Thus *depe-cisci*, *perpeti*, *defetigo*.

Before *ng* it becomes regularly *ǣ* and then, also regularly, *i*, e.g. *contingit*.

Before *b*, *p*, *f*, *m* it becomes *u* (*i*) in *contubernium*, *mancupis* (cf. *mancipium*), *condumno* (also *condemno*).

ā becomes *ē* in *subtēl*, *anhēlo*.

ǣ becomes *ǐ* (by rule), except before *r* or two consonants: *colligo* (but *confero*), *consentio*.

ē seems to become *ī* in *delīnimentum* (but Osthoff, *Z. G. d. P.* 115, note, connects *de-līnire* with *linum*, in the sense of a net, making the form *delēnire* a case of popular etymology).

In *fīlius* (θηλύς), *subtīlis* (τέλα) we may perhaps get an instance of the 'balancing power of l' alluded to above, here operating even with long vowels.

ð becomes ʒ regularly in *illico*, (*in loco*), *ápica* (*ἄποκος*).

Indo-European
ri.

As a special instance of the effect of the presence or absence of accent on a syllable we may notice that *rī* unaccented regularly becomes in Latin *ēr*. Thus *τρίβω*, *κρίνω* regularly would become in Latin **trigo*, **crīno* (cf. *crīmen* : *κρίμα*), but the participle *κρίτός* would become *certus* and *τριπτός*, *tertus*; the compounds *ábs-trigo*, *śé-crīno* would become *ábstergo*, *śécerno*. Hence the simple verb by analogy became *cerno*, *tergo*. So we have **ácrī-bos* = *acerbus*, *ácrī-ssimus* = *acerrimus*; *alacrītas*, *acritas* are new forms for **alacertas*, **acertas*, as *facilitas* is younger than *facultas*. The same theory will explain *ter* (cf. *τρίς*) as originating in a phrase like *bīs et ter*, with but one accent. To the former *ter* is due *quater* (for *quatur*). *Tertius* (*τρίτος*) may have had once the same accent that is still preserved in Sanskrit *trītiya*.

CONSONANTAL COMBINATIONS.

Conso-
nantal
Combina-
tions
in Greek.
Assimila-
tion of
Mutes.

When a mute precedes a mute dental it is assimilated to the hard, soft, or aspirate character of that mute dental.

Thus *χτ*, *θτ*, *φτ* become *κτ*, *στ*, *πτ*.

Thus *ἐχ-ω* but *ἐκ-τός*—*πνέθ-ομαι* but *πυσ-τός*—*ροφ-έω* but *ρόπ-τός*—*βρέχ-ω* but *βέβρεκ-ται*—*βαφ-ή* but *βαπ-τός*—*λέγ-ω* but *λέλεκ-ται*.

στ is found in place of *ττ*, *δτ*, *θτ*, and *σθ* for *δθ*, *θθ*, in *ἅπασ-τος* beside *πατ-έομαι*—*ἴσ-τε* beside *ἴδ-μεν*—*πέ-πεισται*, *ἐπείσ-θην* beside *πείθ-ω*—*ᾄσ-τέον* beside *ᾄδω*—*ἐψεύσθην*, *ἔψευσ-ται* beside *ψεύδ-ομαι*.

An assimilation of *τ* to following consonants is to be seen in the Homeric *κακείοντες*, *κακ κόρυθα*, *κακ κεφαλῇν*, *καγ γόνυ*, *καπ πέδιον*, *κάββαλεν*, *καδ δέ*, *καδδῦσαι*, *κάλλιπεν*, *καμ μέσσον*, *καρ ρόον*, *κάσχεθε*, *κάκτανε*.

The following are instances of the assimilation of a preceding mute to a following aspirate :

ἐπλέχθην, *✓πλεκ-*—*ἐτύφθην*, *✓τυπ-*—*νύχθ' ὄλην*, (*νύκτα*)
—*ἐφθήμερος*, (*ἐπτά*)—*ἐχθρός*—*καταχθόνιος*—*τετράφθαι*—*ἐλεγχθεῖς*—*ἐγράφθην*.

The assimilation in the foregoing instances is merely graphical, and represents no change of pronunciation.

Thus in ἐγράφθην, if θ has phonetically the value of *t + h*, ^{Double aspirates in Greek.} i. e. the hard tenuis followed by the rough breathing, it is not easy to understand why φ of γράφ-ω should be altered to the tenuis before τ in γραπ-τός, while it remains before *t + h* in ἐγράφ-θην. Why not ἐ-γράπ-θην just as γραπ-τός, ἐ-τύπ-θην just as τύπ-τω?

Instead of νύκθ' ὄλην we have νύχθ' ὄλην written. But the fact that final τ is aspirated before the rough breathing should have no influence upon the preceding letter. Again, if both χ and θ are to have the value of a tenuis succeeded by a rough breathing (-κ^hι^hh-), the combination νυκ^hι^h ὄλην would in a single emission of the breath be almost impossible to pronounce.

On inscriptions we find ἐκθρῶν, ἀπθιτον, ἐλεγκθέντος, κατακ-θόνος: and in Herodotus we have such combinations as ἀπ' οὐ, ἐπεξῆς in place of the Attic ἀφ' οὐ, ἐφεξῆς. Another argument against the supposition that both aspirates were pronounced in Greek is to be found in the repugnance the Greeks, in common with other members of the Indo-European family, had to the presence of more than one aspirate in a single word, as is shown in the dissimilation of σωθηθι to σῶθητι, ἐθεθην to ἐτέθην, φυθμην to πυθμήν, θριχος to τριχός, etc. (cf. p. 200).

Tenuis and aspirates are assimilated to Mediae before δ—

πλέκ-ω but πλέγ-δην—κρύπ-τω but κρύβ-δην—κλοπ-ή but κλέβ-δην—γράφ-ω but ἐπιγράφ-δην.

We pass on now to the combinations of mutes and semi-<sup>Combina-
tion of
Mutes and
Semi-
vowels.</sup> vowels.

Original Greek -τι- changes into -σι- unless there is a preceding s, except in the Dorian and Boeotian dialects, e. g. δίδω-σι, λέγουσι, πλούσιος, λύσις, βάσις, τίθησι, φησί, ἀμβρόσιος, πλησίος, διακόσιοι, ἀνεψιός, λέξις, πείσις, ἀφίησι, στάσις, θέσις, etc.

The original -τι has been preserved after preceding s in ἔστι, πίστις, πύστις.

Exceptions are *μάρπτις, πόρτις, ἄρτι, μῆτις, ἀμπωτις, παμβῶτις, ἔτι, αἴτιος, ποτὶ, ἐγκυτὶ, βωτιάνειρα*.

λῆ passes to *σσ*, Attic *ττ*, in *πέσσω, πέττω*, Lat. *coquo*.

λῆ passes to *σσ*, Attic *ττ*, in *ῆσων* (= *ἡκ-ων*), *ῆττων* beside *ῆκ-ιστα*. Other instances are *Φοίνισσα* beside *Φοίνικες*—*Κίλισσα* beside *Κίλιξ*—*Θρᾷσσα* beside *Θρήκη*—*πίσσα* beside *πίξ*, cf. *πύκ-η*—*κολοσσός* beside *κολοκάνος*—*πῶσσω* beside *πῶξ*—*πῆσσω* beside *ἐπτακ-ον*—*λεύσσω* beside *λευκ-ός*—*φρίσσω* beside *φρίξ*—*άίσσω* beside *αἶξ*—*θωρήσσω* beside *θώρηξ*—*φυλάσσω* beside *φύλαξ*—*ῶσσε* beside *oc-ulius*—*ῶσσα* beside *vox*.

χι passes to *σσ*, Attic *ττ*, in *γῶσσα* beside *γῶχες, γῶχίς*—*θάλασσα* beside *ταραχή*—*ψῆσσα* beside *ψήχω*—*βράσσω* beside *βραχύς*—*πάσσω* beside *παχύς*—*θράσσω* beside *τράχ-ύς*—*πτύσσω* beside *πτύξ, πτύχες*—*βήσσω* beside *βήξ*, gen. *βηχός* (Thuc. 2. 49). So also *ὀρύσσω, μορύσσω, μείλίσσω*.

γχι passes to *σσ*, Attic *ττ*, in *ᾶσσω* beside *ᾶγχι*—*ἐλάσσω* (original *ἐλεγχίων*). Cf. *ἐλέγχιστος* (B. 285), *ἐλεγχέες* (Δ. 242).

τι passes to *σσ*, Attic *ττ*, e.g. *ᾶσσα* for *τια*=*τινά* after neuter plurals—i.e. *ὁποῖά ττα* was wrongly divided *ὁποῖ ᾶττα*, and then *ᾶττα* came to be used as an independent word; so *ἐκείνον ᾿νεκα* gave rise to *οὔνεκα* by the side of *ἐνεκα* (K. Z. xxviii. 109). Cf. *χαρίεσσα* beside *χαρίεντα*—*θήσσα* beside *θήτες*—*Κρήσσα* beside *Κρήτη*—*μέλισσα* beside *μέλι, μέλιτος*—*πρόσσω* beside *προτὶ*—and so also *κρείσσω* (Ionic *κρέσσω*), *λίσσομαι, ἱμάσσω, πάσσομαι, ἐρέσσω*.

θι passes to *σσ*, Attic *ττ*, in *κισσός*, Sanskrit *√gadḥ*, Latin *hed-era*—*μέσσω*, Attic *μέσος*, Sanskrit *mádhya-s*, Latin *medius*—*κορύσσω* beside *κόρυθες*—*βήσσω*, *βυσσός* beside *βαθύς*.

After consonants *τι* passes to *σ* in *παντια, πάντα* (Cret.), *πάσα*—*δοκτια, δόξα*—*διπτια, δίψα*—*λεγοντια, λέγουσα*—*μυκτια, μύξα*.

These combinations are represented by *σσ* except in later Attic, and in the Boeotian dialect, which has *ττ* even where Attic has *σ*. Thus in Ar. *Acharn.* 884 we have Boeotian *κῆπι-χάριτται* for Attic *ἐπιχάρισται*. And *πρόσω, ὄσος, ὄποσος*, which have in Attic only a single instead of a double *σ*, yet in

Boeotian are represented by $\tau\tau$. Again, $\kappa\omicron\mu\iota\sigma\acute{\alpha}\mu\epsilon\nu\omicron\varsigma$ for $\kappa\omicron\mu\iota\delta\text{-}\sigma\alpha\mu\epsilon\nu\omicron\varsigma$ is in Boeotian $\kappa\omicron\mu\iota\tau\tau\acute{\alpha}\mu\epsilon\nu\omicron\varsigma$.

Original double σ as in $\xi\pi\epsilon\sigma\sigma\iota$, $\xi\zeta\epsilon\sigma\sigma\alpha$ of Homer is in Attic represented by a single σ , e. g. $\xi\pi\epsilon\sigma\iota$.

The $\sigma\sigma$ which represents $\kappa\iota$, $\chi\iota$, $\tau\iota$ is prior to the representation by $\tau\tau$. In Doric, Ionic, and Lesbian we find $\sigma\sigma$ (cf. Curt. *G. E.* p. 656). There are some forms in double $\sigma\sigma$, later Attic $\tau\tau$, which cannot come from the combination of an explosive with the semivowel. Thus $\lambda\acute{\upsilon}\sigma\sigma\alpha$, $\lambda\upsilon\sigma\sigma\acute{\alpha}\nu$, Attic $\lambda\upsilon\tau\tau\acute{\omega}\sigma\alpha$ can be compared with Sanskrit $\sqrt{\text{रु}}\text{क्ष}$ (be vexed), where there is no sign of an original dental. Curtius also gives $\kappa\alpha\text{-}\sigma\sigma\acute{\upsilon}\nu\epsilon\iota\nu$ (to stitch) for $\kappa\alpha(\tau\alpha)\text{-}\sigma\iota\acute{\upsilon}\nu\epsilon\iota\nu$, in Attic $\kappa\alpha\tau\tau\acute{\upsilon}\nu\epsilon\iota\nu$. For the apocope of the proposition we can compare the Homeric $\kappa\acute{\alpha}\text{-}\sigma\chi\epsilon\theta\epsilon$ (*Λ.* 702). Double $\sigma\sigma$ was then prior to double $\tau\tau$, but there must have been some similarity of utterance between $\sigma\sigma$ and $\tau\tau$ to induce this change. Thus $\theta\alpha\lambda\acute{\alpha}\delta\theta\alpha\varsigma$ quoted from a Cretan inscription, Ἀρθίς appearing beside Ἀττικῆ , and $\Pi\acute{\iota}\tau\theta\omicron\varsigma$, $\Pi\iota\tau\theta\epsilon\acute{\upsilon}\varsigma$ of Attic inscriptions are all indications that the sound of $\sigma\sigma$, $\tau\tau$ was not strictly represented by these letters, but that as the sound really had no peculiar symbol, it was represented variously. The nature of the sound was probably spirant. At the beginning of a word it was represented by single σ as in Epic $\sigma\epsilon\tilde{\upsilon}\epsilon$ (= $\xi\text{-}\sigma\sigma\epsilon\upsilon\epsilon$).

$\pi\iota$ passes to $\pi\tau$ in $\pi\tau\upsilon\text{-}$, $\pi\tau\acute{\upsilon}\text{-}\omega$ from $\sigma\pi\iota\tilde{\upsilon}\text{-}$, $\epsilon\pi\upsilon\omega$. Others are given by Curtius, *G. E.* 497, but these we cannot prove. Common instances of $\pi\tau$ are $\pi\tau\acute{\omicron}\lambda\iota\varsigma$, $\pi\tau\acute{\omicron}\lambda\epsilon\mu\omicron\varsigma$, Attic $\acute{\omicron}\lambda\iota\varsigma$, $\acute{\omicron}\lambda\epsilon\mu\omicron\varsigma$, where Sanskrit shows no sign of $p\acute{\iota}$.

$g^{\text{h}}\iota$ passes to ζ in $\nu\acute{\iota}\zeta\omega$ beside $\nu\acute{\iota}\pi\tau\omega$ for $\nu\iota\gamma\iota\omega$, pointing to an original velar g . So too in $\acute{\alpha}\zeta\omicron\mu\alpha\iota$ beside $\acute{\alpha}\gamma\iota\omicron\varsigma$.

$\delta\iota$ becomes ζ in Ζεύς , Sanskrit $di\acute{a}u\acute{s}$, Latin $dies$ — $\acute{\alpha}\rho\gamma\upsilon\rho\acute{\omicron}\pi\epsilon\zeta\alpha$ beside $\pi\omicron\delta\acute{\omicron}\varsigma$ — $\theta\epsilon\rho\acute{\iota}\zeta\omega$, Boeotian $\theta\epsilon\rho\acute{\iota}\delta\delta\omega$ — $\phi\rho\acute{\alpha}\zeta\omega$ beside $\epsilon\pi\acute{\epsilon}\phi\rho\alpha\delta\text{-}\omicron\upsilon$ — $\chi\acute{\alpha}\lambda\alpha\zeta\alpha$, Latin $grando$. Other instances are $\sigma\chi\acute{\iota}\zeta\alpha$, $\rho\acute{\iota}\zeta\alpha$, $\delta\zeta\eta$, $\xi\zeta\omicron\mu\alpha\iota$, $\phi\rho\acute{\alpha}\zeta\omega$, $\chi\acute{\epsilon}\zeta\omega$.

$\gamma\chi$ becomes ζ in $\mu\acute{\epsilon}\zeta\omega\nu$, Attic $\mu\epsilon\acute{\iota}\zeta\omega\nu$ for $\mu\acute{\epsilon}\gamma\chi\omega\nu$ (cf. $\mu\acute{\epsilon}\gamma\text{-}\iota\sigma\tau\omicron\varsigma$), $\delta\lambda\epsilon\acute{\iota}\zeta\omega\nu$ beside $\delta\lambda\gamma\omicron\varsigma$ — $\mu\acute{\alpha}\zeta\alpha$ beside $\mu\acute{\alpha}\gamma\epsilon\iota\rho\omicron\varsigma$. Also $\phi\acute{\upsilon}\zeta\alpha$, $\acute{\alpha}\zeta\omicron\mu\alpha\iota$, $\pi\lambda\acute{\alpha}\zeta\omega$, $\rho\acute{\acute{\epsilon}}\zeta\omega$, $\sigma\phi\acute{\alpha}\zeta\omega$.

In the Lesbian dialect $\sigma\delta$ stands for ζ in $\acute{\alpha}\gamma\omicron\rho\acute{\alpha}\sigma\delta\epsilon\iota\nu$, $\epsilon\rho\acute{\iota}\sigma\delta\epsilon\iota\nu$, $\pi\alpha\acute{\iota}\sigma\delta\epsilon\iota\varsigma$, etc.

For combinations of μ with consonants cf. p. 170.

Combina-
tion of
Dentals
with μ .

The Dentals τ , δ , θ before μ , according to the rule as usually given, pass to σ , but this is not correct.

σ before μ everywhere disappears except in cases where it is preserved by false analogy. Where σ so disappears, a preceding short vowel is lengthened in compensation, e. g. $\epsilon\iota\mu\iota$, $\epsilon\iota\mu\alpha$, $\eta\mu\alpha\iota$, $\zeta\omega\mu\alpha$. In the pf. part. pass. σ has come in from the analogy of the 3rd sing. indicat., e. g. $\tau\epsilon\tau\epsilon\lambda\epsilon\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$, $\eta\mu\phi\iota\epsilon\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$, $\eta\delta\epsilon\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$, $\delta\iota\epsilon\sigma\pi\alpha\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$, $\tau\epsilon\theta\lambda\alpha\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$, $\beta\epsilon\beta\upsilon\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$, $\alpha\nu\epsilon\lambda\kappa\upsilon\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$, $\epsilon\phi\upsilon\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$, $\epsilon\zeta\omega\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$, $\kappa\epsilon\chi\omega\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$, $\sigma\epsilon\sigma\epsilon\iota\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$. The regular form without σ is kept in $\gamma\epsilon\gamma\epsilon\nu\mu\acute{\epsilon}\nu\omicron\varsigma$ (Eurip. *Hipp.* 663), $\kappa\epsilon\chi\rho\iota\mu\acute{\epsilon}\nu\omicron\varsigma$ (Hdt. 4. 189), $\alpha\pi\omicron\kappa\epsilon\kappa\rho\upsilon\mu\acute{\epsilon}\nu\omicron\varsigma$ (Ar. *Arch.* 459), $\epsilon\iota\rho\upsilon\mu\acute{\epsilon}\nu\omicron\varsigma$ (N. 682), $\epsilon\iota\mu\alpha\iota$ and $\epsilon\iota\mu\acute{\epsilon}\nu\omicron\varsigma$ (cf. Rutherford, *N. P.* p. 97). The σ which has arisen before μ out of τ , δ , θ in such forms as $\pi\acute{\epsilon}\pi\upsilon\sigma\mu\alpha\iota$, $\lambda\epsilon\lambda\acute{\alpha}\sigma\mu\epsilon\theta\alpha$, $\lambda\epsilon\lambda\alpha\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$, $\kappa\epsilon\kappa\acute{\alpha}\sigma\mu\epsilon\theta\alpha$, $\kappa\epsilon\kappa\alpha\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$, $\pi\epsilon\pi\acute{\alpha}\sigma\mu\eta\nu$, is due to the analogy of the indicat. $\pi\acute{\epsilon}\pi\upsilon\sigma\tau\alpha\iota$, etc. Dentals should regularly remain unaltered before μ , e. g. $\epsilon\acute{\rho}\epsilon\tau\mu\acute{\omicron}\varsigma$, $\omicron\acute{\iota}\delta\mu\alpha$, $\pi\upsilon\theta\mu\acute{\eta}\nu$, etc., and in the perfects $\kappa\epsilon\kappa\omicron\rho\upsilon\theta\mu\acute{\epsilon}\nu\alpha$, $\epsilon\iota\lambda\acute{\eta}\lambda\omicron\upsilon\theta\mu\epsilon\nu$, $\epsilon\pi\acute{\epsilon}\pi\iota\theta\mu\epsilon\nu$, $\iota\delta\mu\epsilon\nu$ in Homer, and $\pi\epsilon\phi\rho\alpha\delta\mu\acute{\epsilon}\nu\alpha$ (Pind. *Ol.* 1. 27), $\kappa\epsilon\kappa\alpha\delta\mu\acute{\epsilon}\nu\omicron\nu$ (Sapph. 56 B.), $\pi\epsilon\pi\upsilon\kappa\alpha\delta\mu\acute{\epsilon}\nu\omicron\nu$. Where $\delta\mu$ -, $\tau\mu$ -, $\theta\mu$ - appear to pass to $\sigma\mu$, they really stand for $\delta\sigma\mu$, $\tau\sigma\mu$, $\theta\sigma\mu$, e. g. $\pi\epsilon\iota\sigma\mu\alpha$ for $\pi\epsilon\nu\theta$ - $\sigma\mu\alpha$, $\acute{\alpha}\phi\lambda\omicron\iota(\delta)\sigma\mu\acute{\omicron}\varsigma$ and $\acute{\omicron}(\delta)\sigma\mu\acute{\eta}$ (K. Z. xxvii. 313).

$\pi\mu$ is assimilated to $\mu\mu$ in $\delta\mu\mu\alpha$, $\kappa\acute{\lambda}\epsilon\mu\mu\alpha$. In Lesbian we have $\pi\pi$ in $\delta\pi\pi\alpha\tau\alpha$.

$\beta\mu$, $\phi\mu$ are assimilated to $\mu\mu$ in $\tau\rho\acute{\iota}\mu\mu\alpha$, $\gamma\rho\acute{\alpha}\mu\mu\alpha$, $\kappa\acute{\epsilon}\kappa\alpha\mu\mu\alpha\iota$.

Prothesis.

We have already dealt with the phenomena of the development of an indeterminate vowel in the interior of word (p. 69). Prothesis is the name given to this anaptyctic vowel when it appears at the beginning of a word.

Thus before initial ρ we find $\acute{\alpha}$ - $\rho\acute{\alpha}\sigma\sigma\omega$, $\acute{\alpha}\rho\alpha\beta\omicron\varsigma$, Sanskrit $\sqrt{rambh}$ (roar)— $\epsilon\rho\epsilon\phi\omicron\varsigma$, δ - $\rho\omicron\phi\omicron\varsigma$, δ - $\rho\omicron\phi\acute{\eta}$, cf. English *roof*— $\epsilon\rho\alpha\mu\alpha\iota$, Sanskrit $\sqrt{ram}$ (be content)— ϵ - $\rho\epsilon\acute{\iota}\kappa\omega$, Sanskrit $likh\acute{a}t\acute{\iota}$ — ϵ - $\rho\epsilon\acute{\iota}\gamma\omicron\mu\alpha\iota$, Latin *ruclare*— ϵ - $\rho\upsilon\theta\rho\acute{\omicron}\varsigma$, Latin *ruber*.

Before initial λ , $\acute{\alpha}$ - $\lambda\epsilon\acute{\iota}\phi\omega$, cf. $\lambda\acute{\iota}\pi\alpha$, $\lambda\iota\pi\alpha\rho\acute{\omicron}\varsigma$ — ϵ - $\lambda\alpha\chi\acute{\upsilon}\varsigma$, Latin *levis*— ϵ - $\lambda\epsilon\upsilon\theta\epsilon\rho\omicron\varsigma$, Latin *liber*— δ - $\lambda\iota\sigma\theta\acute{\alpha}\nu\omega$, cf. $\lambda\iota\sigma\sigma\acute{\omicron}\varsigma$, and

Homeric λίτα πετάσσας — δ-λίγος, cf. Hesychius λίζον̄ ξλαττον.

Before initial *μ*, ἀ-μαλός, cf. μαλακός, Latin *mollis*—ἀ-μέλγω, cf. Homeric Ἰππη-μολγοί, Latin *mulgeo*—ἀμύνω, Latin *moenia*—ἀ-μύσσω, Latin *micro*.

Before initial *F*, ε-ύρύς, ε-ἴρος, ε-ἴλη, ἐ-έρση, ἐ-είκοσι, ε-ἱλαπίνη, cf. *voluptas*; α-ύξάνω, cf. ἀφέξω, Latin *veg-eo*.

Before a consonantal group, ἐ-χθές beside χθές—ι-χθύς—ἀ-σκαρίζω—ἀ-σπαίρω beside σπαίρω—ἀ-στήρ: but we cannot in these cases be sure that the initial vowel is merely prothetic; it may be the result of composition, or else an original part of the root. Other instances are ἱ-σθι, ἀ-κροάομαι, δ-βριμος, ἄ-φλαστον. We may however compare the similar prothetic vowel before double consonants in the Romance languages, e. g. *escalier*, Lat. *scala*, *espérer*, Lat. *sperare*, etc. It is conceivable that the prothetic vowel may have originally occurred in many cases only where the preceding word ended with a consonant, after which an initial group of consonants would be difficult to pronounce. Compare the similar case of *τέγος* used after consonants, *στέγος* after vowels.

In certain cases where the semivowels *ι* and *υ* follow a consonant, the preceding syllable undergoes a change. Where the succeeding semivowel is *ι*, the preceding syllable is palatalised. The *ι* or *υ* disappears after the consonant, and reappears in the preceding syllable. The final consonant of the preceding syllable is either *ν*, *μ*, *ρ*, *σ*, or *F*. Epen-thesis.

Thus φαν-ιω becomes φαίνω, κον-ιος (=κομ-ιος) becomes κοινός, μακαρία becomes μάκαιρα, τεκταν-ιω becomes τεκταίνω.

ν and *μ* may be the last member of a combination *κν*, *πν*, *φν*, *τν*, *δν*, *χν*, e. g. ἀκν-ιον, αἰκνον—δεπν-ιον, δείπνον—ἐξαφ-νιάς, ἐξαίφνης, cf. ἄφνω—δεσ-ποτυα, δέσποινα—ῥαδν-ιω, ῥαίνω—ἀχμια αἰχμή, cf. ἔγχος. Other instances of Epenthesis are to be found in μέλαινα, τάλαινα, λέαινα, σώτειρα, μοῖρα, ὄνειρος, μάγειρος.

In such presents as φθείρω, the *ει* is not to be regarded as the result of Epenthesis. In Lesbian we have φθέρρω, in Arcadian

φθήρω, so that *ει* is rather a compensatory lengthening for the disappearance of *ι* of φθερ-χω.

In κρείττων, μείζων there is no Epenthesis; the *ει* follows the analogy of χείρων. In Ionic we have κρέσσων for κρετιων, and μέζων for μεγ-ων.

Instances of *ε* Epenthesis are more rare. ταῦρος for ταρχος is the most probable, and κένταυρος beside Sanskrit *gandharvá*.

Compensatory lengthening.

Under the head of vowel combinations we have already spoken of the compensatory lengthening of a vowel after the disappearance of a succeeding consonant as, e. g. in στήλη for σταλλα. The phenomena of compensatory lengthening are most frequent in words where *σ* is combined with a liquid or nasal. Thus πανσα becomes πᾶσα, τους becomes τοús, etc.

Before liquids and nasals *σ* passes in sound to *z*. In the Aeolic or Lesbian dialect these combinations are represented by a doubling of the liquid or nasal, e. g. χέλλιοι for χέσλιοι, μῆννος for μνησος. In the other dialects *ρρ* represents *σρ* as in ἐρρύην, but in the other combinations the *σ* disappears, and the preceding vowel is lengthened as, e. g. χηνός for χανσος, εῖμα for ἔσμα, φαεινός for φαεσνος, Aeolic φάεννος.

Where *σ* is the second member of the combinations we sometimes find it retained as in τέλσον, κόρση, and sometimes expelled with compensatory lengthening of the preceding vowel as in ξμεινα. This retention of the *σ* is common in Homer, e. g. Θερσίτης, ἀπόφερσε, κύρσαι, διαφθέρσει, θερσόμενος, ἔλσαι, κέλσαι, etc.

Wackernagel (*K. Z.* xxix. 124) has endeavoured to connect the representation of *σ* combined with liquids and nasals with the shifting of accent. Thus where the accent is on the preceding vowel, the final *s* of the syllable is surd and remains; if the accent falls elsewhere the *s* becomes *z*, in which case in Aeolic we have a doubling of the liquid or nasal, and in other dialects a single liquid or nasal with a compensatory lengthening of the preceding vowel.

Thus in ὄρρος, new Attic for ὄρσος, the accent is on the first syllable, the *σ* is surd and is retained, but in οὐρά the accent is on the final syllable, the *σ* disappears and the vowel is lengthened. ὄρρος represents *órros*, but οὐρά represents *orzá* which should be in Aeolic *ὄρρα, in Doric *ὠρά.

Again κύρση, Attic κύρρη, has the *σ* surd in the accented syllable, but

κουρεύς has the sonant *z* in the unaccented syllable. The same change is illustrated by *φέρση* beside *φουρέω* (= *φορέω*).

In verbal formations we have *ᾠρσε*, *ᾠρσας*, with the accent on the root syllable, and from the root of *δραρίσκω*, *ᾠρσας* as compared with *ᾠρειν*. Again, *κείρω* has in Homer in the active *διακείρσαι*, but in the middle *κείράμενος*, *κείρασθαι*. There are no parallel forms in *rz* to the words *θάρσος*, *ἐτέρσεται*, *χέρσος*.

From *χείρ* we find in Homer the stem *χειρ-* before vowels, *χερ-* before consonants. The one exception to this rule is the use of dative sing. in such a phrase as *ἐν χειρὶ θῆκεν* which is due to the analogy of the similar *ἐν χερσὶν ἔθηκεν*. The true stem of the word is *χερσ-* *χερεσ-* as we see from *δυσχερής*. *χειρός* then is for *χερός*, and the *ει* has been extended by analogy to *χείρᾱ* for *χέρσα*, *χέρσα*.

Of combinations with *λ* we find *ἄλσος*, *τέλσον*, *ἔλσαι* side by side with *ἔσφλα*, *ἡγγεῖλα*, *ᾠκειλα* where the accent is of necessity upon the augment.

The combination *νσ* appears in *νίσομαι* for *νινσομαι*, in *πεφήσεται* for *πεφέλσεται* from *πεφενσεται*, and in *εἴσω* for *ἐνσω*.

The combination *nz* appears in the declension of *χῆν*, *χηνός* (for *χανσός*, cf. Latin *anser*) and *μῆν*, *μηνός* for *μηνσός*, Aeolic *μῆννος*, Latin *mensis*.

σ before a nasal is due to false analogy in the Attic *ἡμφίεσμαι*, which has been formed after the model of *ἡμφίεσται*. The regular form is seen in *εἶμαι*. *σν* passed into *νν* in *ἐννυμι* (*ἐσνυμι*), *Πελοπόννησος* (*Πέλοπος νῆσος*). But the Ionic *εἶνυμι* shows the more regular form.

In the combination of *νσ*, followed by a consonant, the nasal fell out without other change, e. g. *κεντ-*, *κεστός*—*δενσ-*, *δεσ-πότης*—*συν-στ-*, *σύστασις*—*ἐνσ-*, *ἔστε* (until)—*χαριεντ-*, *χαριέστερος*—*πεντηκοντα*, *πεντηκοστός*.

An accumulation of consonants was lightened by the disappearance of one of them from the group, e. g. *τιθευτς*, *τιθευς*, *τιθείς*—*περθσαι*, *πέρσαι*—*πσταρν-*, *πτάρνυμαι*, cf. Latin *(p)ster-nuo*—*πσδ-εω*, *βδέω*—*σπκν-*, *πτύ-ω*—*πτρα-*, *τράπεζα*—*ράδνκ-*, *ράινω*—*λεκστο*, *λέκτο*—*έίσκω*, *έίσκω*.

We have dissimilation of *υ* to *ι*, perhaps in *πινυτός* for *πυνυτος*, *ψιθυρός* for *ψυθ-*. Cf. *ψυθίζω*, *ψιθυρίζω* (Hesych.).

Of *ρ* to *λ* in *ναύκλαρος* for *ναυ-κρα-ρος*.

λ to *ρ* in *ἄλγος* beside *ἀργαλέος*.

Loss of liquid by dissimilation occurs in *ἐκπαγλος* for *ἐκπλαγλος*, *δρύφακτος* for *δρυ-φρακτος*.

Dissimilation of aspirates occurs in

τίθημι for θιθημι—τέθην for έθεθην—ένύθετο for έφυθετο—
τρίχος for θριχος—έκεχειρία for έχεχειρία—έχω for έχω for σεχω
—ίσχω for ισχω for σισχω—έδεθλον beside έδος—ά-λοχος be-
side ά-παξ. So also τέθητι for θεθηθι—τύθητι for θυθηθι—
έταφον for έθαφον—θρέψω but τρέφω—θρέξω but τρέχω—
θράσσω but τραχύς.

For σωθηθι we have σώθητι rather than σωτηθι, because this last would obscure the -θη- suffix of the aorist. In χύθητι there is no dissimilation, but the double aspirate is kept, as dissimilation would obscure the verbal and tense stems, χέω, έχεια, έχύθην.

Syllabic dissimilation, in which one of two neighbouring and similar syllables is lost, occurs in άμ(φι)φορέύς—κέν(τη)τωρ—
θάρ(σο)συννος—τέτρα(δρα)χμον Παλα(μο)μήδης—Πλεισ(το)-
θένης.

Meta-
thesis.

Metathesis of consonants is very rare—τίκ-τω for τι-τκ-ω, σκέπ-τομαι, Latin *specio*, ξίφος beside Lesb. σκίφος.

The old instances given as cases of metathesis can be otherwise explained, e.g. in έ-σχε-ς we have the reduced root (p. 227) and πλη-το points to original root *plē* not *pel*. Other supposed instances of metathesis have been already explained in treating of nasal and liquid sonants, e.g. στρωτός, μέμβλωκα, θρώσκω, etc. (p. 115).

Final Con-
sonants.

At the end of a word, the Greek rule is to admit only the consonants ν, ρ, σ, e.g. πάτερ, πέπον, ίππος. Where other consonants would naturally come they either disappear, as in έφερε, Sanskrit *ábharat*, ήσαν, Latin *erant*, γύναι(κ), άνα(κτ), ή(κτ), or are changed to s, as ούτως for ούτωδ. Final m in Greek appears as ν—Sanskrit *tám*, Latin *istum*, Greek τόν.

There are monosyllabic exceptions to these rules, e.g. έκ and ούκ, but of these έκ stands for έξ before consonants, ούκ for ούκί or ούκί before vowels.

Combina-
tion of

It will be convenient, in considering the laws of consonantal combination in Latin, to distinguish three possible cases: that

in which the consonantal combination is initial, and therefore precedes a vowel-sound ; that in which it is medial, and therefore stands between two vowels ; and that in which it is final, and therefore follows a vowel-sound. Those combinations only that are of special philological interest will be treated of in detail here.

Consonants
in Latin.

Of two mutes the first disappears. The instances are not numerous, but *tilia* corresponds to the Greek *πελέα*, and points to a primitive *ptelea*. In inscriptions we find *Tesiphon*, *Tolemaid* for *Ctesiphon*, *Ptolemaid* (*Inscr. Regn. Neap.* 3395). In *πίσσω* beside *pi-n-so*, *Pis-tor*, Sanskrit $\sqrt{pi}$, *pi-na-si* (1) Two initial mutes. (2) Initial Mute and Spirant.

Initial *ps* becomes *p* (*ps* only occurs initially in words borrowed from the Greek), e.g.—

ψύλλα : pul-ex. ψιλοῦν : pil-are.

ψηλαφᾶν : palpare. ψάρ : par-us.

The connexion of ψάμαθος with *sabulum*, *sabulo*, is more than doubtful, as the consonants nowhere agree. ψάμ(α)θος is more probably identical with the English *sand*.

Initial *pst* becomes *st*.

So πᾶρν-μαι : sternuo $\sqrt{pst}$ gn.

πύρεσθαι : consternare, ex-sternare.

The attempt to connect these last with *sternere*, *στορέννυμι* is not satisfactory as regards the meaning and does not account for the conjugation.

The characteristic of this combination is the frequent loss of the initial spirant—a loss which runs through the whole of the Indo-European families. The survival in any one word or language seems very much the result of accident. An ingenious explanation, however, has been offered. In Sanskrit and in Greek *s* regularly disappears in the middle of a word between two mutes. Thus we have Greek *ἔκρος* corresponding to Latin *sextus*. It is accordingly suggested that where an initial *s* followed by a mute was preceded by a mute at the end (3) Initial Spirant and Mute.

of the preceding word, and therefore in the sentence-combination stood between two mutes, it disappeared: where, on the other hand, the preceding word ended in a vowel, the *s* was kept. Thus in the original language they may have said *ūd-pekiō* but *perī-spekiō*. When the individual word rather than the spoken sentence came to be considered as the unit of language, it was a matter of accident whether the form adopted in any language was that in which the word was preceded by a vowel or that in which it was preceded by a consonant. The same principle may account for the absence of the final *-s* in some forms of the nom. sing. The original language may, e.g. have used *népōts-esti* by the side of *népōt-ge*, whence may have arisen on the one hand the Sanskrit nom. *napāt*, on the other hand the Latin nom. *nepō(t)s*. (See *M. U.* iv. 329.)

Loss of final *s*.

The same reason may underlie the loss of a final *-s*, which was so common in Latin till the time of Cicero. The *s* would at first have been kept before a word beginning with a vowel, but lost before one beginning with a consonant under the same circumstances as entail the loss of *s* initially or in the middle of a word. That is, as **squarescit* became *quiescit*, so *confectus-quiescit* became *confectu' quiescit*, and as *corpulentus* became *corpulentus* (p. 213), so *confectus-labore* became *confectu' labore*.

Loss of initial *s*: (a) before *c*;

Instances of the loss of initial *s* in Latin are—

cerno : Goth. *skeirs* (pure), cf. A.-S. *hri-dder*, English *riddle* (a sieve). Cf. *κρίνω*, *cri-brum*, etc.

cūtis : scūtum, κύτος, σκύτος. Cf. ob-scu-rus, ἐπι-σκούριον.

coruscus, Old Lat. *scoruscus*.

corium : scortum.

cena, Old Lat. *scenas* (Festus). Cf. *κναδάλλω*, Sanskrit ✓*khād* (chew).

cavere : Gothic *usskavs*, Germ. *schauen*, English *show*.

The root also appears in *κοφίω*, *ἐκομεν*, *ἡσθόμεθα* (Hesych.), and possibly in *δ-κούειν* (for *δ-σκοφ-ειν*). Traces of the original spirant are seen in *θυο-σκούf-os*.

We may notice also—

quies : κτίζω, κτίμενος, √*sk̥i*, Sk. *kṣēti*, whence tran-
(s)quill-lus, κτίλος.

But *capisterium* beside σκαφιστήριον seems merely a case of popular etymology, the word being borrowed, and falsely assimilated to *capio*.

curtus, A.-S. *sceort*, English *short*.

caedo, A.-S. *scīlan*, German *scheit*.

tonare : στόνος.

(b) before
t;

tego : στέγω.

tur-dus : stur-nus.

tundere : Goth. *stautan*, English *stunt*.

tibia (the shin bone) : στειβω.

trio (septem triones) : stella (for ster-la).

For interchange of *ri* and *er* see p. 192.

tergere : strig-ilis ; cf. στλεγγίς (?).

torus : στόρνυμι.

sterno cannot be separated from this root.

pumex : spuma.

(c) before
p.

We may connect *spuo*, Greek πτύω.

parcus : σπαρνός.

There are some cases where the sound following the spirant appears variously as a dental, labial, or guttural ; but the nature of the original combination is obscure. Thus we have :—

studium : σπεύδω.

turgere : σπαργάν.

talpa : σπάλαξ and σκάλοψ.

stercus : σκώρ, Sanskrit *śakṛt* ; cf. στεργάνος (Hesych.).

-specere : σκέπτεσθαι, Sanskrit √*śpac*, *paç* (see p. 414).

scaber : ψαφαρός.

scintilla : σπιινθήρ.

σκόλον is probably distinct from *spolia* and connected with σκύλλω ; *spatium* is said to be from στάδιον, through the Doric form σπάδιον, but in this case the confusion would have originated in Greek.

sperno has been connected with *πέρνα*, but the corresponding Sanskrit *māṛṇis* is against this, and the Greek τ may be compared with the unexplained *πτολίεθρον*, *πτόλεμος* (cf. p. 195).

In *qui-squil-iae*, Greek *κο-σκυλ-μάτια*, the σ is lost in the reduplication in both languages; cf. *σκύλλω*.

(4) Two
Initial
Spirants.

su appears variously as *s* or *su*, but the laws under which it takes one or the other shape are not as yet known.

(a) As *su* in—

suavis, *suadeo* : ἡδύς (for σφᾶδύς), Sanskrit *svād-ús*.

With this may be connected *suavium* (also *savium*).

suŕsco : ἔθος (for σφέθος), ἥθος.

Initial *ŕ* becomes *so* in—

sodalis : ἔθος (contrast *suŕ-sco*).

Possibly *sodes*, if not for *si audes*, according to the traditional account, may be a vocative from the same root ('my friend').

soror : Sanskrit *svásar*, Indo-European *smésor*.

sordidus : *suasum*. Cf. English *swart*, German *schwarz*.

sudor : ἰδρώς for σφιδρώς, Sanskrit *svéda*.

sudor stands for **soidor* (as *unus* for *oinos*), and this for *smeidor*. Cf. English *sweat*, German *Schweiss*.

socer : ἑκυρός for σφεκυρος, Sanskrit *svásura*.

somnus : ὕπνος for σφεπνος.

sex is proved by digamma in Greek inscriptions (*Φεξήκοντα*, *Φεξακάτιοι*, etc.) and by the Welsh *chwech* to be for *smex* : in this word the simple *s* in Latin may be due to early assimilation to *seplem*, before the time when *smex-* passed to *so-* (*M. U. i.* 96).

(b) As *s* in—

salum : σάλος, English *swallow*.

This and the following comparisons with Greek depend on the law of that language that an initial σ followed by a vowel has always lost a *f* after the σ.

saltus : σαίρω, English *sward*.

sero : σερρά for **σερχα*.

se : ἔ for σφε.

serenus (for *seres-nus*) : σέλας.

si : Oscan *svai*.

In the case of *fundā*, *fungus* it is usual to say that they are borrowed from the Greek *σφενδόνη*, *σφόγγος*, and that *f* consequently represents *sf*. But more probably the exact form of the words is due merely to assimilation to *fundere*, *fungi*. *fallere* is often compared with the Greek *σφάλλειν*, but the root is more probably *dhual*, the Gothic *dvals*.

A media before a tenuis becomes assimilated to the tenuis.

Medial combination.
1. Two Mutes.

Thus *ag-o*, *ac-tum*; *scrib-o*, *scrip-tum*; *veho* (for *vegh-o*, Greek *ἔχος*), *vec-tum*.

The combination of *d*, *dh*, *t*, with a supplementary *t*, demands a fuller treatment, and cannot be discussed without reference to the question of the real quantity of vowels in syllables long by position. (*M. U.* iii. 131; *Osthoff, Z. G. d. P.* 152, 522 sq.)

The question at issue is this: are we to suppose that in *missus*, e.g. (for *mit-tus*) the vowel is naturally long, as in *mīsi*, and that we have the strong form of the stem, or that the past participle in this case follows the general analogy of such formations in taking the reduced form, and that *mīssus* is to be compared with *λύτός*?

Vowels long by position.

The data for deciding this question are threefold:—

(i) The transcription of such forms in Greek. The quantity of the *o* in *fossus*, for example, seems determined by *φόσσα* in *Plut. Fab. Max.* 1.

(ii) The use of distinctive characters for the long vowels in Inscriptions, e.g. the apex (JÚLIÓ), the doubling of the vowel (PAASTORES), the writing of the long *i* as the diphthong *ei* (MEILIA) or taller than the other letters (cIvIca). But this last instance, from the *Monumentum Ancyranum*, is sufficient to show how little dependence can be placed on this sort of evidence.

(iii) The most important evidence obtained is from the various ways in which the long and short vowels, independent of position, are represented in the Romance languages. The following is a list of the principal representatives:—

Latin *ī* is Romance *é* (close vowel).

„ *ī* „ *i*.

„ *ē* „ *è* (open vowel).

„ *ē* „ *é* (close vowel).

„ *ū* „ *ó* (close vowel).

„ *ū* „ *u*.

„ *ā, ă* „ *a*.

„ *ō* „ *ò* (open vowel).

„ *ō* „ *ó* (close vowel).

Thus we have—

fissus, Italian *fesso*, but tristis, French *triste*, Ital. *triste*.

spīssus, „ *spesso*, but quinque, French *cinq*, Ital. *cinque*.

missus, „ *messo*.

percūssi, „ *percossi*, but ūstus, Italian *perusto*. Cf.
French *brûler* (perustilare).

rūssus, „ *rosso*.

grēssus, French *pro-grès*.

cēssus, Italian *cèso*, French *ex-cès*.

pēssimus, „ *pèssimo*.

fōssus, „ *fòsso*.

Forms with
double and
single Con-
sonants.

We have, however, a set of double forms in Latin, which also often appear in the Romance languages, one set with a long vowel followed by a single consonant, the other with a short vowel followed by a double consonant. Thus—

*mītere, German *meiden*, beside mīttere, French *mettre*.

lītera, litus, beside līttera, lītus, French *lettre*.

būca „ būcca, Italian *bocca*, French *bouche*.

cūpa, Fr. *cuve* „ cūppa, Italian *coppa*, French *coupe*.

sūcus, Fr. *suc* „ sūccus.

glūtire „ { glūttire, Ital. *inghiottire*, Fr. *en-*
gloutir.

mūcus, Gk. *μῦκος* „ mūccus, Italian *moccio*.

So stūpa : stuppa,

Jūpiter : Jūppiter,

mūtire : mūttire, where both forms are equally well authenticated.

The existence of these doublets is so far unexplained.

As far as concerns the Latin combination *ss*, the following Latin law may be laid down.

A. Indo-Germanic *t*, *th*, *d*, *dh* followed by *t* between vowels and after nasals and liquids becomes in Latin, except before *r*, in the first instance *ss*.

This *ss* is—

(i) kept as *ss* when immediately following a short vowel; hence *scissus*, *missus*, *fissus*, *possessus*, *concussus*, *jussus* (from *scīd-tus*, *mīt-tus*, *fid-tus*, *possēd-tus*, *concūt-tus*, *jūdh-tus*). *ussimus*, *gessimus* are from an original *s + s*.

(ii) written as *s* after a long vowel: hence *vissus*, *caesus*, *laesus*. *rāsimus*, *suāsimus* are from an original *d + s*.

We may especially notice the case of the ordinals, e.g. *vicensimus* for *vicent-timus*, *vikint-timo-s*, etc.

Cases where the combination appears after a nasal or liquid are *versus* for *vert-tus*, *sensus* for *sent-tus*, *morsus* for *mord-tus*, *scansum* for *scand-tum*, etc. So *tensus* for *tend-tus*, but *tentus* for *tñ-tus*.

All exceptions to this rule are the result, not of phonetic law, but of analogy. Thus *ed-s*, *ed-t* become *es*, *est* from the analogy of *es*, *est* for *es-s*, *es-t*. So *comestus* (by the side of *adēsus*) is formed on the analogy of *gestus*. Similarly *potestas* (stem *poti-*), *egestas* (stem *egē-*), are on the analogy of *honestas* (stem *hones-*).

But an original *st* is unaltered in Latin, as in *ges-tus* (*gero* for *ges-o*), *tos-tus* (for *tora-tus*, *torr-eo*, *τέρσ-ομαι*), *ves-tis* (*Ἑσ-θής*), *gus-tare* (*γεύ(σ)-ω*), *hones-tas* (stem *honos-*, *hones-*), *sceles-tus* (stem *scelos-*, *sceles-*). In every case where *ss* (*s*) appears in place of an original *st* the result is due to analogy; thus we have *ensor*, *censum*, beside Oscan *censtur*, on the model of *defensor*, *defensus*; *pinsum* (also *pistor*) beside *sensus*; *hausurus* (for *hausturus*) beside *clausurus*; *cursus* (from *curro* for **curso*) beside *morsus*, etc. And indeed the analogy of those forms where the *s* in the past participle is legitimate explains the appearance of *s* in e.g. *lapsus* (for *laptus*, cf. *scriptus*), *fixus* (for *fictus*, cf. *lictor* from *ligo*), *parsus* (for *parctus* or *partus*, cf. *arceo*, *arctus*, *artus*). In some cases, however, the influence of the sigmatic perfect may have been operative.

B. An original *t*, *th*, *d*, *dh*, followed by *t* before *r*, becomes *str-*, hence *rostrum*, *claustrum*, *rastrum*, *pedestris*, *equestris*, *palustris*, *frustra*, *possestris*, *tonstris*.

In a few cases there are traces of a different treatment of *dh + t* resulting in a metathesis of the aspirate, such as we find in Sanskrit, where *dh + t* becomes *-ddh-*. Thus an original *d* followed by *dh*, resulting from an earlier *dh + t*, passed to *zdh*, then to *śp* (where *ś* is the toneless aspirate), and thence to *st*, *ś* being kept as a dental by the dental sibilant *s*, but changed to the corresponding tenuis.

Thus <i>aestas</i> , <i>aestus</i>	from √ <i>aidh</i> , Greek αἰθω.
<i>custos</i>	„ √ <i>keudh</i> , Greek κεύθω.
<i>hostis</i> (<i>hasta</i>)	„ √ <i>ghēdh</i> , <i>ghedh</i> , Sk. <i>gādhyā</i> .
<i>castus</i>	„ √ <i>kadh</i> , Greek καθάρως.
<i>manifestus</i> , <i>infestus</i>	„ √ <i>bhedh</i> .

In *infensus*, *defensus* the *n* comes from the present stem, and *net* becomes *ns*, as in *censor*, Oscan *censtur*; but *manifestus*, *infestus*, though from the same root, have no corresponding verbal forms to influence them.

crēdo is Sanskrit *ṛaddha*, i. e. *crezdho* = *crespo*, *cresdo* = *crēdo*, this form (instead of *cresto*) being due to the other compounds of the root *dhē* (θη-), e. g. *ab-do*.

vāstus (in 'vastus aether,' the hollow sky) is thought to stand for *vād-dhós* (*ved-dhós*, *vadh-lós*), past participle of √*vēdh*, which appears in *ūd-h-γ* (ὠδῆρ, *uber*). The identical form *vāstus* (*vast*) with a long *ā* is from a different root, which appears in Celtic (*K. Z.* xxviii. 166).

Other combinations of Mutes. Medial *-dc-*, *-gb-*, *-gd-* become *-c-*, *-b-*, *-d-*, the preceding vowel being lengthened.

Thus *postī-cus*, *anti-cus* : *postid-ea*, *antid-ea*.

fibula, stem *fig-* in *figo*.

jūbilo, cf. *lvy-ή*.

tēba, stem *teg-* in *tego*.

ūdus, stem *ug-*, cf. *ύγ-ρός*.

But in other cases assimilation of *-dc-* to *-cc-* takes place, and the preceding vowel is then naturally short; thus *pēccare* for *ped-care* (cf. *pessum* for *ped-tum*, *pes*, *imped-ire*); *flōccus* for

nídus (perhaps) for nísduš (English *nest*).

aúdire for aús-dire; cf. aur-is, aus-culto, oŭs.

málus for másduš (English *mast*).

On the other hand we have *sálĭn*, *vidĕn*, *lácĕn*, *rógĕn*, *sédĭbus* for *sédes-bos*, *vidimus* for *vides-mos*, Sanskrit *ávedisma*, etc. (K. Z. xxvii. 328).

Of special interest here are the adjectives in *-ídus* and kindred forms. They seem to have arisen from stems ending in *-s* with the suffix *-do*. Thus *frígíduš* will come from *fríges-dus*, just as *mólibus* from *móles-bos*. They frequently correspond to abstract substantives in *-or*, and we may suppose, e. g. an original *frígōs*, genitive *frígesos*, adjective *fríges-dó-*, with an abstract substantive *frígesdo**, genitive *frígesdnis*. Then, when the retraction of the accent began to come in, a penultimate syllable protected by three consonants would tend to keep the accent from retreating further than that syllable, and we might get *frígeslus*, *frígesdo*, but *frígésdnis*, whence *frígíulus*, **frígido* but *frígédnis*, which last must become *frígédinis*, whence was formed a nominative *frígēdo*. In some cases a syncope of the unaccented syllable takes place, and we have *calíulus* and *caldus*, *aríulus* and *ardor*. It would seem that the adjectival termination *-dó* was originally accented, and the stem vowel consequently short.

Similarly there may have been an adjective **oresdús* with an abstract substantive **óresdo*, genitive **orsdnis*, whence **ordnis* and *ordinis*, which produced a nominative *ordo*; or the form *ordo*, not **orēdo*, may be due to the fact that there is no *ē*-verb (as with *frígere* beside *frígēdo*) to determine the vowel.

libūdo (stem *libē-* in *libere*) may owe its *ī* to the *ī* in *cupīdo* (stem *cupī-* in *cupire*). *formīdo* is obscure (K. Z. xxviii. 167).

-st- is a stable compound, and remains in *aus-ter*, *exta* (*ec-sta*), *fustis* (for *furs-tis*, cf. *θύρ-ος*), etc. So *aestimo* possibly for *aes-tem-o*; cf. *τέμ-νω*, *τέμ-αχος* (Havet, *Mém. Soc. Ling.* vi. 23). The appearance of *ss* (*s*) for *st* by analogy has been explained above.

In general we may say that the combination of the soft

sibilant *z*, followed by *b*, *g*, *d*, *m*, *n*, *r* loses the sibilant, and lengthens the preceding vowel, if it carries the accent, whereas the combinations with the hard spirant, *sc*, *sp*, *sq*, *ss*, *st* remain intact. *sq* however often loses the spirant, as *inquam* for *in-squā-m*, *coinquo* for *co-in-squ-o*, *√sek* in *seco*.

-zv- becomes *-rv-* in *furvus* (cf. *fuscus*), *acervus* (cf. *acus*, 4. Combination of Spirants). *divello*, *divergo* are on the analogy of *dī-gressus*, etc.

-sf- is assimilated to *-ff-* in *difficilis*, etc.

No combination of two consonants (except *x*) is allowed, so we get *as* (for **ass*, cf. *ass-is*), *lac* (for *lact*), *cor* (for *cord*), etc. Final combinations.

t and *d* followed by *s* become simple *s* (through *ss*), e. g. in *milēs* (*milit-*), *pēs* (*ped-*), the final vowel of the stem being short, except in monosyllables.

Any guttural followed by *s* becomes *x*; e. g. *rex*, *lux*.

-bs or *-ps* are the result of syncope in *urbs* (stem *urbī*), *plebs* (stem *plebī*), *trabs* (*trabes*), etc.

-cls becomes *x* in *nox*.

dī becomes *j* in *Ju-piter*; cf. Ζεύς, Sanskrit *Dyāus*.

dū becomes *b* (sometimes *d*) in *bellum* (*duellum*); *bis*, *dimus* (*dimus*), cf. δῖς, δῦο.

cū seems to become *c* in *canis* (cf. κων-), *calix* (κύλιξ).

tū becomes *t* in *te*, *tibi*, Sanskrit *tva*.

dhū becomes *f* in *fores* (*dhūr*, cf. θύρα), *foliis* (*dhul*, θύλακος).

tl certainly becomes *l* in *lātus* (τλατός). But *lātus* for **platus* (πλατός)*, *libum* for *clibum* (κλίβανος, Anglo-Saxon *hlāf*, English *loaf*), and *lamentum* for *clamentum* (*clamo*) can hardly be accepted, for initial *pl*, *cl* are constant in Latin; *latera* may be borrowed from λάπαρα (*asbracchium* from βραχίων), the feminine singular being taken as a neuter plural, with *t* for *p* on the analogy of *lātus*, *lateo* (cf. Κύκλωπες with *coelites* on the analogy of *mīlites*), see Havet, *Mém. Soc. Ling.* vi. 23.

gn in classical times becomes *n*, e. g. *nosco* : *i-gnarus*—*nascor* : *co-gnatus*—*niri* : *genu*—*nodus* for *gnodus* (English *knot*).

Combina-
tions of
semi-
vowels,
mutes, and
spirants.

A. Initial.
I. Mute
and semi-
vowel.

In *cognōmen*, *ignominia* the *g* is by false analogy from *cognatus*, etc.

hl, *ghl* seem to become *l* in *luridus*, cf. *χλωρός*, and perhaps in *lutum*, *luteus*, cf. *χρυσός*, *χρυσέος*.

gl perhaps becomes *l* in *lac* for *glac* (*γάλα*).

2. Spirant and semi-vowel.

sm, *sn*, *sl* lose the spirant, perhaps for the same reason as suggested above (p. 202).

Thus we have—

mirus, Sanskrit *√smi*, English *smile*, *smirk*.

macula, Greek *σμάω*.

mica, Greek *σ μικρός*, *μικρός*.

laxus, English *elack*.

nix, English *snow*.

nurus, Sanskrit *snusa*, German *Schnur*.

limus, English *slime* (but *lime*, Anglo-Saxon *līm*, shows the non-sibilated root); cf. *δλισθάνω* for *δ-σλιθ-θάνω*, English *slide*.
mordere, Greek *σμερδ-νός*, English *smart*.

sr may become *fr* (through *pr*, where *p* is the hard dental aspirate) in *frigus* : *ρίγος*—*fragum* : *ράξ* (but cf. *racemus*). On the other hand, *Roma*, *Rumo* (the old name of the Tiber, cf. *Στρυμών*, English *stream*) seem to be from a root *srū*, in *ρέω* and perhaps *ruo*, cf. *ἀμφίρρυτος* = *ἀμφι-σρυ-τος*; and, medially at least, *sr* becomes in Latin *-br-* (cf. *con-sobr-inus* for *con-sor-inus*, *funeb-ris* for *funes-ris*), so that the change of *sr* to *fr* must be considered doubtful.

Metathesis of the liquid seems to have taken place in *sarcio* beside *ράπτω*, *sorbeo* beside *ρόφέω*.

vl, *vr* become *l*, *r* in *lana* (*λάχνη*) : *vellus* (*ἔριον*, *Φερ-ιον*)—*lorum* : *ἔλληρα* (*ἔ-Φληρα*)—*radix* (*ῥῑd-ic-s*) : English *wort* (*ῥrt*).

lacer has been connected with *vol-nus*, but cf. *λακερός*, which may however be for *Flκ-ερος*.

rēpo may possibly be Greek *ρέπω* (*Φρεπ-*), but the quantity of the vowel is against it.

3. Spirant, mute, and semivowel.

stl becomes *l* in *locus*, Old Latin *stlocus*.

lis „ *stlis* (German *Streit*).

sllataria may be connected with *lātus*, τλατός.

spl becomes *l* in *lien* for *splihen*, σπλήν (cf. σπλάγχνα). *splen* is borrowed.

In the case of *plumbum* the *p* probably represents an original *m*, cf. μ-δ-λυβος.

A medial mute before a semivowel is ordinarily lost, and the B. Medial. preceding vowel lengthened; thus—*filum* (fig-o).

pūmilus, cf. pug-io, pug-il, πύξ, Πυγμαῖος.

pila for **pigla*, pi-n-go.

exāmen (ǎgo), but cf. *agmen*.

jūmentum (jǔg-um).

But *stilus*, *stimulus*, (✓*stig* in στιγμή) have short *i*.

contāminare, cf. ta-n-go, tago.

rīma, cf. ri-n-gi, ῥ-ρεῖκ-ω, ✓*rik*.

āio for *ahio*, cf. ἤχ-ώ, ἤχ-αγεν.

frūmen, cf. φάρυγ-ξ.

mājor for *mahjor*, μῆχος.

rūmentum, cf. ab-rup-tio.

āmentum for *admentum*.

glūma, cf. glōb-us, βόλβος ✓*golb*.

tēmo, ✓*teg*.

caementum (caedo).

cacūmen, Sanskrit *kakūdmant*.

aemidus for *aedmidus*, cf. οἶδμα.

But assimilation seems to have taken place in *flamma* (*flagro*), yet cf. *flā-men*, unless this is for *flad-men*, cf. ἐφλαδον, παφλάζω, German *blōtan* (Curt. G. E. 301); and in *summus* for *supmus* (*super*).

sl, *sm*, *sn* become *l*, *m*, *n*, the preceding vowel being long or short according as it is accented or not.

Thus *vilis* for *veslis* with assimilation of vowels on either side of *l* (p. 71), cf. Sanskrit *vasnā*, *vēnum* (= *vesnum*), ὠνος (for *Fos-vos*?).

cānus, cf. cas-cus, cas-ca.

pōne for *pos-ne*, cf. pos-t.

ahēneus for *ahes-neus*.

1. Combinations of mute, spirant, and semivowel.

céna, Umbr. cesna.

degúno, cf. gus-tus.

vómis for vosmis, cf. ὄνις or ὄννη (Fεσ-νις).

querēla (querella) for queré-sla, but querī-mónia.

véhēmens for véhezmens (cf. for the formation Sanskrit *āyus-mant*).

cŭlína for coc-slina, co-slina, as pālus for pac-slus (pac-tus), vélum for vec-slum (vec-tus).

So *omittere* is not for *om-mittere*, but rather for *ōz-mittere*, where *oz-* = *ops-*, Greek ὀψέ (cf. *ostendere*, *as-porto*). Similarly *mólēs* but *mōlestus*, from a stem *mogsilhes* in μόχθ-os, the root being *mog-* in μόγ-ις, the termination the same as in λά-σθη : *mōliri* is from a different root, and presupposes a substantive **mōlos* or *mohlos* = μολός.

The termination *-slo* which appears in many of these words is also seen e. g. in ὄχλος for Fεχ-σλος or Fοχ-σλος, which corresponds with the Latin *velum* (for *vegh-slo-m*).

Some other cases of the combination *-sn* will be given below (p. 217).

An original *tl* (medial) became in primitive Latin *cl*; thus the suffix *-clo* (*sae-culo-m*, *sae-clu-m*) corresponds to the Greek suffix -τλο (*ἄν-τλο-s*); cf. *exanclare* beside ἐξαντλείν (borrowed). For the further dissimilation to *-cro* v. infra (*Grundr.* p. 281).

-sr- becomes *-br-* in—

cerebrum for ceres-rum (cf. cernuus for cers-nuus, etc.).

tenebrae for temes-rae, cf. temu(s)-lentus.

membrum for mems-rum.

februus for fes-ruus, cf. fes-tus.

So too the adjectives in *-bris* from substantives in *-os*, *-es*, (*funebri*s, *fenebri*s, *muliebri*s, *celebri*s, etc.).

-dtr-, *-ttr-*, as already shown, become *-str-* (p. 208).

-gbr-, *-tbr-* become *-br-* in *libra* (✓*lig*), *saluber* (for *salut-br-*).

-csl- becomes *l*, lengthening the preceding vowel, in—

āla : axilla.

vēlum : vexillum.

māla : maxilla.
 tālus : taxillus.
 pālus : paxillus.
 aula : auxilla.
 quālus : quasillus.

See Cic. *Or.* 45. 153.

Assimilation of the mute to the following semivowel takes place in sella for sed-la, cf. ἔδ-ρα, Laconian ἐλλά.

grallae : grad-ior, √gradh.

villa : vic-us.

paullus : pauc-us.

rallum : rad-o (or possibly for *rarulum).

-bn-, -pn- become -mn- in Samnium : Sab-ini.

somnus : sopor, ὕπ-νος.

damnum : δαπ-άνη, dapes.

So possibly *antennae* for *ant-ep-nae* (root *ap-* in *ap-tus*), if not for *ante-ten-nae* (*ten-eo*), or cf. *trans-enna* below.

Combinations of a short vowel, dental and *sn* result in a short vowel followed by *nn*, thus:—

pēnna for petsna, Old Latin pesna.

pīnna for pitsna, cf. piscis for pitseis.

ānnus for atsnus, cf. Gothic, *apn*, Sanskrit √at (wander),
 cf. transenna.

annus cannot be for *ānus, nor again for *amnus* (Osc. *amnuul*), as *mn* is constant (*amnis*). *annona* is only connected by popular etymology with *annus*. It should be *ānona for *asnona.

Combinations of a short vowel followed by -sn- (-rsn-) or by a guttural and *sn* become a long vowel followed by *n*.

Thus arānea is for arag-snea (ἀράχνη).

lāna for lag-sna (λάχνη) (if not ὑλ-νά).

finis for fig-snis, Lith. *baigti*.

In the case of -tn-, -dn-, we get a metathesis to -nd- as in fundus for fud-nus, cf. πυθ-μήν.

unda for ud-na, cf. ὕδωρ, Ἀλσος-ύδνη.

mendax for ment-nax, cf. ment-ior.

pando for patno, cf. pateo, πίτ-νη-μι.

mando, Sanskrit *mathnāmi*, √math (shake).

Similarly the gerund stem is formed from the present participle by the suffix *-no-*, e.g. *amando-*, for *amant-no-*.

Again, we may suppose an original **voraco* (cf. *vorax*), gen. **voracnis*, which last became **voragnis* and *voraginis*, whence the new nom. (cf. p. 210). So with *testudo*, *ferrugo*, etc., from an original **testuto* (cf. *testu*), **ferruco* (formed with the same termination as *verruca*).

Planus would seem to be for **plancnus* (*planca*), and *ilignus* for *ilic-gnus* (cf. *abie-gnus*).

On the other hand, *mercennarius* is by a later syncope for *merced(i)narius*. *Cachinnus* beside *καχάειν* may represent *cachyd-nus*, but the *ch* seems to show that the word is not purely Latin. *Gannire* is for *gang-nire*, cf. *γαγγαλιζω*. *Cincinnati* seems to be connected with *cingo* (for *cin-cing-nus*?). The form *grundire* is vouched for by the French *gronder*; *grunnire* will be a dialectic form. Compare the Plautine forms, *distenno*, *dispenno*, from *tendo*, *pando*. *Pecunia* can hardly be for **pecudnia*, as it is an extremely old word, and must be from the pure stem *pecu-*, of which *pecud-* and *pecus* are later amplifications (p. 314).

Similarly *sallere*, *salsus* is from a stem *sald-* (cf. Eng. *salt*), where the stem *sal-* is extended by *d*, as in *pecu-d-*, from *pecu-*. So *percello*, *perculus* show a stem *keld-*, *kld-*, cf. *κλάζω* for *κλαδίζω*.

2. Combinations of semivowel and mute or spirant.

r and *l* assimilate a single following mute or spirant. Thus:—

mollis	for molduis	Sanskrit <i>mṛdú</i>	<i>βραδύς</i> .
collum	for colsum	German <i>Hals</i> .	.
velle	for vel-se.		
ferre	for fer-se.		
verres	for verses	Sanskrit <i>varṣá</i> .	
farreus		Umbrian <i>farsio</i> .	
porrum	for p̄rsom		cf. <i>πράσον</i> .
Dossennus	cf. dorsum.		
verrere	cf. ἀπό-φέρσ-ε.		

Where however the *s* is of secondary origin *rs* remains, or

becomes *ss* (*s*), as in *russum*, *rusum* for *re-versum*, where *versum* = *vert-tum* (p. 209), cf. *prosa*.

Nasals are assimilated to the following sound, as in *frendo*: *χρόμ-α-δος*—*ton-deo*: *τέμ-vw*.

It has been thought that *ms* becomes *ss* in *pressi* for *premsi*, but *contem-p-si* is against this, and *premo* may be for **perdhmo* (cf. *πορθμός* (a narrow arm of the sea) and for loss of the dental *dormio*: *δαρθάvw*, *ver-men* for *vert-men*). In this case *pressi* may go back to *perdh-si*.

mt becomes *nt* in *ven-tum* (Sanskrit *√gam*, English *come*), *tento*: *tempto*, etc. The insertion of the *p* is a later device due to a desire to maintain the identity of the word.

Where a semivowel is followed by two mutes or a mute and a spirant, the second letter of the combination is dropped. Thus:—

mulsi for *mulc-si*—*amsanctus* cf. *amb-esus*, *ἀμφί*, cf. *am-termini*—*fulsi* for *fulg-si*—*ultus* for *ulc-tus*—*arsi* for *ard-si*—*sparsi* for *sparg-si*—*quintus* for *quinctus*, but contrast *functus*, *junctus*, *nactus* (*nactus*)—*ursus* for *orcus*, cf. *ἄρκτος*, Indo-European *fkso*—*urvus* for *uorguus*, cf. *vergo*—*fortis*, Old Latin *forctis*, *forctus*—*turdus* for *turzdus*, cf. English *throst-le*—*hordeum* for *korzdeum*, Old High German *gersta*.

In the combinations *-nst-*, *-rsc-*, *-rst-* the semivowel is lost, e.g.:—*bimestris* cf. *mensis*—*posco* for *por-sco*, *porc-sco* cf. *precor*—*fustis* for *furstis*, *θύρρος*—*tostus* for *torstus* (*torreo* for *torseo*, *ρέρσο-μαι*)—*fastigium* for *farstigium*.

Cf. *Maspiter*, older *Marspiter*; *Tuscus* beside *Etruria*, *Turscus*, Umbrian *Tursco*.

In *manifestus*, *pistor*, etc., which are from the past part. stem, the nasal of the present stem does not appear (p. 208).

A mute or spirant between two semivowels is lost, e.g.:—*alvus* for *alsvus*, cf. English *alder* for *alg*—*germen* for *gerb-men*, cf. *βρέφος*, Indo-European *gerbh*, with metathesis of the liquid; otherwise it would become **vermen*—*scala* for *scand-la*—*cernuus* for *cersnuus*, cf. *κόρσ-η*, *ἐγ-κάρσιος*—*perna* for *persna*, Sanskrit *pārṣṇi*—*urna* for *urc-na*, cf. *urc-eus*.

-ndtr- by the rule given above (p. 208) becomes *-nstr-* in *tonstrix*.

3. Combinations of semi-vowels.

-rn- is usually a constant sound, e.g. in *furnus*, but *murra* seems to answer to Greek *σούρμη* and *scurra* (for *skuerua*) to Old High German *scern*, English *scorn*.

-rn- originates in Latin in three ways:—

(1) An intermediate consonant is lost, as in *urna*, etc., quoted above.

(2) An intermediate vowel is lost, in *quernus* for *ques-i-nus*, *columnus* for *corul-i-nus*.

(3) The *r* is a liquid sonant in *ornus*, *cornus*, *cornu*. *Cerno*, *sterno*, *sperno* are doubtful, but as the suffix *-nó* is accented, the root must have originally appeared in the reduced form.

lv is generally kept, as in *salvus*, *calvus*, *pelvis*, *silva*, *solvo*, etc. In many of these words the *v* was capable of becoming a vowel, as in *silvae* (Hor. *Epod.* 13. 2), *solvit* (Catull. 2. 13), and frequently we find in inscriptions a vowel introduced to mark this pronunciation (*Sulevia* for *Silvia*, *Sulvia*), or a doubling of the character *v*, as in *INGENVVAE*. In other cases, however, the *v* was assimilated to the preceding liquid (as Greek *πολφη* = *πολλή*). Thus we get side by side *pulvis* and *pollen* (? cf. p. 301), (where the difference is the same as in *sanguis* : *sanguen*) ; *sōlus* or *sollus* and *ὄλος* (*όλος*, Ionic *οὔλος*) (cf. p. 185) ; *mel(l)* and *μέθυ*, Sanskrit *madhu* ; *tollo* (for *toluo*) and *tolu-tim* ; perhaps *fel(ū)is* and *θηλυ-s* (Bréal, *Mém. Soc. Ling.* vi. 120).

Of other combinations of semivowels the following may be noticed :—

-m̄- becomes *-n̄-*, in *venio* for *gm̄io*, cf. *meare* for **gm-care* ; *quoniam* for *quomiam* ; so perhaps *conicio*, etc. for *com̄icio*. For Greek instances cf. p. 135.

-mr- becomes *-nr-* in *gener* from *gemro-*, cf. *γαμβρός*.

-r̄- has been thought to become *-i-* in *peiero* for *per̄iero*, but this is very doubtful. A later theory is that *peiero* (for *peies-o*) is formed from the comparative *peior*, against which

it may be said that verbs formed from comparatives do not occur till late in Latin.

-*ln-* becomes -*ll-* in *collis* : κολωνός (κοῖνος)—*pullus* : πῆλλός, Cyprian πιλνός—*cello* : Sanskrit *çrnāti*.

Where -*ln-* occurs, some intermediate sound has been dropped, as in *ulna* : ὠλένη (where *ε* is a *svarabhakti* vowel), *alnus* for *alsnus*.

-*mn-* does not become -*nn-* or -*n-* (cf. p. 215). *novēni* is rather an analogical form than directly for *novem-ni*.

-*nl-* becomes -*ll-* in *homullus* (*homon-lus*), *ullus* (*un-lus*), *Marullus* (cf. *Maro*), *Messalla* (cf. *Messana*).

-*nm-* becomes -*mm-* in *gemma* (✓*gen*).

-*rl-* becomes -*ll-* in *agellus* (*ag-e-r-lus*), *stella* (*ster-la*, cf. ἀστήρ), *pullus* (*pure*), cf. *pur-us*.

Note that *pullus* (*black*) is for *pul-nus* (πῆλλός) and *pullus* (*young*) for *put-lus* (cf. *putus*, *putillus*).

Between two liquid or nasal sonants *tenuēs* change to *mediae*, as in *singuli* for *sg-klo-*, *nongenti*, *septingenti* for *neuphktō-*, *septmktō-*.

Final combinations with semivowels are simplified to a single consonant, thus *far* for *farr* (cf. *farris*). So we have *cor* for *cord*, *topper*, *antioper* for -*pert* (afore-times), cf. Osc. *petiro-pert* (four times), so with all adverbs in -*per* (*Archiv für Lat. Lexicogr.* i. 102).

In *fert* for *fer-ti* the *t* is perhaps not really final.

Before dental spirants a semivowel is lost, as in *dies* for *dieys* (cf. Ζεύς), *res* for *rejs* (Sanskrit *rayas*), *agros* for *agro-ns*, *quoties* for *quotiens* (which is also found).

But the combination -*nts* becomes -*ns*, as in all pres. participles, to which we may perhaps add *trans*, which may be a participle (cf. *in-trare*).

The exception in *hiems* (not *hies*) may be explained as due to the analogy of the oblique cases (cf. p. 305).

Also the combinations -*nds*, -*rts*, -*rds*, -*lts* lose the mute, as in *frons*, *ars*, *concor*, *puls*. On the other hand -*ncs*, -*lcs*, -*rcs* remain unchanged, e.g. *conjunct*, *fals*, *ars*.

Dissimila-
tion of
liquids.

It may be well to notice here cases where consonants not in immediate juxtaposition nevertheless modify one another.

The most interesting case is that of the interchange of the liquids *l* and *r* in successive syllables. These two sounds tend to alternate with one another in suffixes according to very definite rules. Where the body of the word contains an *l*, the suffix will appear with the liquid *r*, where, on the other hand, the stem has an *r*, the suffix takes the liquid *l* (Havet, *Mém. Soc. Ling.* vi. 27; *K. Z.* xxvii. 113; Brugmann, *Grundr.*, p. 219).

Thus the suffix *-alis* appears in its normal form in *fatalis*. But where the root contains *r*, we find instead *-aris*, thus *altaria*, *exempl-aris*, *consul-aris*, *salut-aris*, *vulg-aris*, *lupan-ar*, *pulvin-aris*, *palatu-ar*, *line-aris*, etc.

So too Ἀλαλία and *Aleria*, *coelum* and *coer-uleus*, *Pales* and *Parilia*, *largus* (*dŕghós* with *d* becoming *l*) and *δολιχός*.

The same rule governs the alternations of *-c(u)lum* and *-crum*, thus *ambula-crum*, *simula-crum*, *sepul-crum*, *lava-crum*, *lu-crum* (*λύ-ω*), *involu-crum*, but *ludi-cer* (beside *ridi-culus*, cf. *pul-cer*). Again we have *scalp-rum*, *flag-rum* beside *capulum*, *jaculum*, *vinculum* beside *fulcrum*, *labrum* beside *capitulum*, etc. So also *delu-brum*, *candela-brum*, *Vela-brum*, *pollu-brum*, *lava-brum*, but *pa-bulum*, *vesti-bulum*, *sta-bulum*, *tri-bulum* (yet *concilia-bulum*).

The suffix *-bra* does not however seem to change; cf. *terebra*, *scatebra*, *vertebra*, *latebra*, *palpebra* (also *palpetra*), *dolabra*, *salebra*, *illecebra*.

Among verbal forms we may notice *flag-ro* but *postulo*, *blaterare* but *gratulari*, *latrare* but *ambulare*.

Where however an *r* intervenes between two *l*'s, both *l*'s are kept (*lateralis*, *Lupercal*), and no dissimilation takes place between two *r*'s (*cerebrum*, *feretrum*, *aratrum*). Forms violating the law (*Palatualis*, *legalis*, *Latialis*, *letal*, *latibulum*) may be taken as newer formations.

An absolute loss of the liquid by dissimilation occurs in *praestigiæ* (*√strig*, *stringo*), *fragare* beside *fragrare*, etc.

Loss of a
syllable.

Another noticeable instance of the tendency to dissimilation resulting in the loss of a sound is the case where one of

two successive similar syllables is completely lost. Thus we have *calamitosus* for *calamitatosus*, *nutricis* for *nutri-tricis*, *veneficium* for *veneni-ficium*, *debilitare* for *debilitatare*, *hereditarius* for *hereditat-arius*, *antestari* for *ante-testari*, *trucidare* for *truci-cidare*, *dentio* for *denti-tio*, *homi-cidium* for *homini-cidium* (but cf. p. 304), *voluntas* for *volenti-tas* (if not assimilated to *voluptas*), *scilicet*, *ilicet*, *videlicet* for *scire-licet*, etc.

Cases of the assimilation of consonants not in juxtaposition are less common. It is however certain that *quinque* stands not for *qenge* but rather for *penge*. The initial labial is vouched for by all Indo-European languages, and the guttural in Latin is due merely to that in the succeeding syllable, unless indeed the initial sound of *quattuor* has affected it. Similarly *coquo* is primarily for *quequo* and this for *pequo* (*pego*, cf. Greek *πέσσω*). *Popina*, *popa*, where the guttural has been assimilated to the labial, are probably Italian rather than Latin words, the true Latin form of the former being *coquina*.

Assimilation of labials and velars.

A case of assimilation of the second sound to the first occurs in *prope*, whose guttural appears in *proximus*. The word would seem to be the same as Greek *πρόκα* in the Herodotean formula *καὶ πρόκα τε*.

In every case the guttural is a velar, not a palatal. We are perhaps justified in laying it down as a law, that wherever a velar and a labial occur in Latin in the same word, one is assimilated to the other. Hence we get yet another explanation of *bos*, whose *b* (Indo-European *g*) may possibly have originated in the dat. plur. *bobus* (for *gou-bus*). So *vulva* is written in the MSS. *bulba* and stands for Indo-European *gelbh-* (*βρέφος*). The same law holds good in the Celtic languages (cf. Old Irish *cóic*, Cymr. *pimp*, Indo-European *penge*; Cornish *popei*, Cymr. *popurys*, Indo-European *✓peg*) and forms a fresh argument for the close connexion of the Italic and Celtic families.

CHAPTER X.

ABLAUT OR VOWEL-GRADATION.

The meaning of Ablaut.

ABLAUT or Vowel-gradation is the general name for all differences of quantity, quality, and accent of the sonant element in any syllable of a root or suffix, which do not originate at the time of the separate development of the individual Indo-European languages, but are due to distinctions existing already in the primitive language. The conception of Ablaut has revolutionized the whole theory of the growth of the Indo-European languages and of their systems of inflexion. It is of special importance in regard to the theory of roots.

The nature of Roots.

By a root is usually understood that element of unity common to a related group of words, which is obtained from them by abstraction, whether in a derived or in the original language. When and under what circumstances roots were used as words we cannot determine. The derived languages are, as we assume the parent speech to have been, inflexional, and the radical element is not found existing as a separate word but is only obtained by abstracting that element which is common to a related group. But the question arises, upon what principle the root is to be assumed, whether in a derived or in the original language; and how far does such a root serve the purpose of illustrating the element of unity common to a group of related words.

In dealing with this question we are at once confronted with grave difficulties. For instance in the Greek language, if we take the groups βάλλειν, βολή, βέλος, βαλεῖν—στέλλω, στολή, σταλῆναι, we shall find that the roots usually given in dictionaries and grammars are √βαλ and √στέλ. But these

roots are merely in each instance the bases of the present stem of the verb and do not provide us with an element common to all the connected words.

From $\sqrt{\beta\alpha\lambda}$ we cannot at once get $\betaολή$ and $\betaέλος$, nor from $\sqrt{\sigma\tau\epsilon\lambda}$ can we get $\sigmaτολή$: and if we say that the form $\sigma\tau\epsilon\lambda$ must be prior to the form $\sigmaτολ$, simply because it occurs in a greater number of related forms, we resign all hopes of discovering any fundamental unity.

Again in the groups—

<i>Φοῖδα</i>	<i>Φεῖδομαι</i>	<i>Φίδμεν,</i>
<i>εἰλήλουθα</i>	<i>ἐλεύ(θ)σομαι</i>	<i>ἤλυθον,</i>
<i>σωρός</i>	<i>σεσᾶρώς</i>	<i>σεσᾶρνῖα,</i>

the roots ordinarily given would be $\sqrt{F\iota\delta}$, $\sqrt{\epsilon\lambda\upsilon\theta}$, $\sqrt{\sigma\alpha\rho}$, which are the weakest forms under which the root in each instance appears. By the same process

from $\deltaέρκομαι$, $\deltaέδορκα$, $\xiδρακον$ we should get a $\sqrt{\delta\rho\alpha\kappa}$.

<i>πέτομαι</i> , <i>πότημος</i> ,	<i>ἐ-πτ-όμην</i>	$\sqrt{\pi\tau}$.
<i>ἔπομαι</i>	<i>ἐ-σπ-όμην</i>	$\sqrt{\sigma\pi}$.
<i>ἔχω</i>	<i>ἐ-σχ-ον</i>	$\sqrt{\sigma\chi}$.
<i>τέμνω</i> , <i>τομή</i>	<i>ἐ-τε-τμ-ον</i>	$\sqrt{\tau\mu}$.
<i>φόνος</i>	<i>ἐπε-φν-ον</i>	$\sqrt{\phi\nu}$.
<i>εἶ-μι</i>	<i>ἴ-μεν</i>	$\sqrt{\iota}$.
<i>eram</i> (for <i>es-am</i>)	<i>s-umus</i>	$\sqrt{s}$.

Most of these roots are necessarily unpronounceable, and it is inconceivable that they should ever have existed as actual words; but they might be accepted as mere abstractions, if it could be shown that they were really the characteristic elements of the groups of words to which they belong. But in the case of the $\sqrt{\phi\nu}$ we find by the side of $\xiπε-φν-ον$ in Homer $\piέφαται$, $\deltaδυνή-φατος$ and also probably a present $\thetaείνω$ for $\thetaενίω$, where, as has been shown above, θ represents the original velar guttural before the palatal vowel ϵ . It is clear that a $\sqrt{\phi\nu}$ fails to account for these forms.

Again in the series $\gammaόν-ος$, $\γέν-ος$, $\gammaί-γν-ομαι$, $\gammaε-γά-ασι$, in what sense can a $\sqrt{\gammaεν}$ be considered as characteristic of the series? The same difficulty arises in the case of $\μέμνονα$ and $\μέμαμεν$, $μίμνω$ and $μονή$, $τείνω$, $τόνος$ and $τατός$.

Vowel-intensification.

These anomalies were formerly explained by the theory of vowel-intensification,—a theory derived from the Sanskrit grammarians, who call such intensification '*guṇa*.' According to this theory the Sanskrit vowels *a*, *i*, *u*, *r*, *l* could be 'gunated' by the addition of the vowel *a*. Thus the *guṇa* of *i* would be $a + i =$ Sanskrit *e*, and this in turn was still further intensified by the addition of a second *a*, so that we get $a + a + i = \bar{a}i$. This second amplification is known as the *rddhi* of *i*.

Acting on this hint, the earlier philologists, especially Schleicher, constructed a table of vowel-intensification for Greek and Latin.

An *A* scale by which in Greek *a* was raised first to $\bar{a}$ or η , e. g. $\lambda\alpha\kappa$, $\lambda\acute{\epsilon}\lambda\bar{a}\kappa\alpha$ —and ϵ was raised to $\omicron$, e. g. $\gamma\epsilon\nu$, $\gamma\omicron\nu\eta$, $\gamma\acute{\epsilon}\gamma\omicron\nu\alpha$: secondly to ω , e. g. $\rho\acute{\eta}\gamma\gamma\upsilon\mu\iota$, $\xi\rho\rho\omega\gamma\alpha$.

An *I* scale by which *i* was raised first to $\epsilon\iota$, secondly to $\omicron\iota$, e. g. $\lambda\iota\pi$, $\lambda\acute{\epsilon}\iota\pi\omega$, $\lambda\acute{\epsilon}\lambda\omicron\iota\pi\alpha$.

An *U* scale by which *u* was raised first to $\epsilon\upsilon$, secondly to $\omicron\upsilon$, e. g. $\eta\lambda\upsilon\theta\omicron\nu$, $\acute{\epsilon}\lambda\acute{\epsilon}\upsilon(\theta)\sigma\omicron\mu\alpha\iota$, $\epsilon\iota\lambda\acute{\eta}\lambda\omicron\upsilon\theta\alpha$.

But this theory can only be applied to cases in which forms with a short vowel or semivowel exist side by side with fuller forms. From $\sqrt{\lambda\iota\pi}$ in $\acute{\epsilon}\lambda\iota\pi\omicron\nu$ it may be possible by vowel-intensification to arrive at $\lambda\acute{\epsilon}\iota\pi\omega$ and $\lambda\acute{\epsilon}\lambda\omicron\iota\pi\alpha$, from $\sqrt{\phi\upsilon\gamma}$ in $\acute{\epsilon}\phi\upsilon\gamma\omicron\nu$ at $\phi\acute{\epsilon}\upsilon\gamma\omega$. But in cases like $\acute{\epsilon}\text{-}\sigma\chi\text{-}\omicron\nu$ beside $\acute{\epsilon}\chi\omega$, $\acute{\epsilon}\xi\omega$ (for $\ast\sigma\acute{\epsilon}\xi\omega$), and $\acute{\epsilon}\kappa\acute{\epsilon}\text{-}\kappa\lambda\text{-}\epsilon\tau\omicron$ beside $\kappa\acute{\epsilon}\lambda\text{-}\omicron\mu\alpha\iota$, no amount of vowel-intensification can produce a vowel where a vowel does not exist.

Guṇa in Sanskrit.

In Sanskrit *r* and *l* are still recognised as vowels and have their proper *guṇa* *ar*, *al*, and thus $\sqrt{dṛk}$ could be intensified to *dark*: but is it possible in Greek to regard $\delta\acute{\epsilon}\rho\kappa\text{-}\omicron\mu\alpha\iota$, $\delta\acute{\epsilon}\delta\omicron\rho\kappa\alpha$ as gunated or intensified forms of $\sqrt{\delta\rho\alpha\kappa}$ which appears in $\acute{\epsilon}\delta\rho\alpha\kappa\omicron\nu$? And are $\beta\omicron\lambda\acute{\eta}$, $\beta\acute{\epsilon}\lambda\omicron\varsigma$ gunated from the $\sqrt{\beta\alpha\lambda}$ in $\beta\acute{\alpha}\lambda\lambda\omega$? Is it possible that mere intensification of sound can produce a vowel which is totally different in character?

But the *guṇa* theory breaks down even in Sanskrit in the case of roots containing a nasal. For here we meet with forms that apparently have lost the nasal altogether, and we find *mata*, *tata* by the side of the roots *man*, *tan*. By what

process of vowel-intensification is it possible in Sanskrit to produce *man* from *ma-ta* or in Greek to get *τεν* in *τείνω* (for *τενίω*) from the unnasalised form *τατός*? The process is only explicable on the hypothesis of nasal sonants, but the existence of such sounds was unknown to the supporters of the *guna*-theory. We have, however, already seen that in words like *ἐπαθον*, *τατός*, etc., the *a* represents an original nasal sonant, and that in e.g. *ἔδρακον* the *ρα* is the Greek amplification of the original liquid sonant *ṛ*. In these instances, therefore, it may be just possible to admit the *guna*-theory, the liquids or nasals in these groups playing precisely the same part as the semi-vowels in the roots *πιθ*, *πυθ*.

Thus we may compare the series—

<i>ἔδρακον</i>	<i>δέρκομαι</i>	<i>δέδορκα</i> ,
<i>ἔταμον</i>	<i>τέμνω</i>	<i>τομή</i> ,
with—		
<i>ἐπιθον</i>	<i>πείθω</i>	<i>πέποιθα</i> ,
<i>ἤλυθον</i>	<i>ἐλεύ(θ)σομαι</i>	<i>εἰλήλουθα</i> .

In each case the first column shows the pure sonant or semi-vowel, the second its *guna*, formed by the addition of *ε*, the third its *vrddhi* formed by adding *ο*.

But in the case of roots not containing a sonant or semi-vowel, what are we to say? We have seen that the weakest form of the roots of *πέτομαι*, *ἔχω*, *εἰ-μί* (= *ἔσ-μι*) are *πτ*, *σχ*, *σ*. By what process can these be gunated or intensified to *πετ*, *ποτ*, *σεχ*, *έσ*, as the phenomena of the language require?

It is in fact in the case of roots of this class that the theory of vowel-intensification breaks down. A signal instance of its failure is to be seen in Curtius' *Greek Etymology*. Curtius theoretically sets before himself, the aim of arriving at a root which shall be the ideal unit of a group of related words: but in practice he is reduced to accepting double roots such as *κελ*, *καλ* : *βελ*, *βαλ* : *τρεπ*, *τραπ*, etc. (*G. E.* p. 54). The only principle by which the priority of one form over another can be determined is the purely empirical one of supposing that form to be most original which appears in the greatest number of the related words, and even this leads to difficulties such as that

Curtius' theory of roots.

of supposing βαλ to be the root of ἔβαλον, but στελ that of the similar form ἑστᾶλην.

The original vowels.

The question cannot be solved without an enquiry into the number of the original vowels. Curtius' theory of the priority of the *a* and its 'splitting' into the later sounds *e* and *o* has been already stated (p. 56), and we have seen good reason for rejecting this view and holding that the original language possessed all three vowels *a*, *e*, *o*, the two last of which, however, have no distinct written symbol to represent them in Sanskrit.

Now roots containing the semivowels *i*, *u* can, as far as graphic representation goes, have only one development in Sanskrit, inasmuch as there is only one vowel, *a*, to be prefixed. The fuller form, therefore, of √*ric* can in Sanskrit only be √*rec* (= *raic*). In Greek, however, where *ε* and *ο* are kept distinct, we get beside λειπ the two forms λειπ and λοιπ. With this triple gradation or Ablaut the facts of Sanskrit are not really inconsistent; *raic* in that language represents both λειπ and λοιπ, and we are therefore justified in supposing, the facts of kindred languages being consistent, that this triple Ablaut is primitive, and represents a phenomenon which existed in the original Indo-European language.

New theory of roots.

Let us now state the more recent view of the nature of roots which has superseded that of Curtius.

Roots present themselves to us under two main forms, the full or strong form, and the reduced or weak form. In the great majority of cases moreover the full form in its turn exists in two different shapes, one containing the vowel *e*, the other the vowel *o*.

Classification of roots.

Roots may be conveniently divided into three classes:—

I. Roots which terminate in a semivowel (*i*, *u*) or in a nasal or liquid (*m*, *n*, *r*, *l*).

II. Roots containing a semivowel, nasal, or liquid followed by a consonant.

III. Roots not containing a semivowel, nasal, or liquid, and ending in a consonant.

Those roots which do not contain a semivowel, liquid, or nasal, and which do not end in a consonant (e.g. in Greek $\theta\eta$, $\sigma\tau\tilde{\alpha}$, $\delta\omega$) may be for the present ignored.

Now all the roots which admit of the above classification contain in some of their forms the vowel e , and are then said to be strong or full roots. In other forms, however, this vowel is expelled, and they are then called weak or reduced roots.

As soon as the theory of nasal and liquid sonants is admitted, it becomes at once clear that these sounds (r , l , m , n) play exactly the same part in derivation and inflexion as the semivowels i , u . The full form of a root containing any one of these sounds will also contain an e , as e.g. $\pi\epsilon\nu\theta$, $\delta\epsilon\rho\kappa$. The reduced form will expel the e and we shall get e.g. $\pi\nu\theta$, $\delta\rho\kappa$, which last is written in Greek $\delta\rho\alpha\kappa$, the liquid becoming sonant before the consonant. In the full form the semivowel or liquid is consonantal, having no sound of its own apart from the vowel e ; in the reduced form the semivowel or liquid becomes sonant and acts as a full vowel. We are therefore justified in giving the following proportion, $\pi\epsilon\nu\theta : \pi\nu\theta = \delta\epsilon\rho\kappa : \delta\rho\alpha\kappa$ ($\delta g\kappa$).

But in precisely the same way we have, in Class III, the full root $\pi\epsilon\tau$, the reduced root $\pi\tau$, the last being only pronounceable and therefore only appearing before a vowel ($\xi\text{-}\pi\tau\text{-}\delta\mu\eta\nu$). We may therefore say:—

$$\begin{aligned} \pi\epsilon\upsilon\theta\text{-}\epsilon\tau\alpha\iota : \xi\text{-}\pi\nu\theta\text{-}\delta\mu\eta\nu &= \pi\acute{\epsilon}\tau\text{-}\epsilon\tau\alpha\iota : \xi\text{-}\pi\tau\text{-}\delta\mu\eta\nu. \\ &= \delta\acute{\epsilon}\rho\kappa\text{-}\omicron\mu\alpha\iota : \xi\text{-}\delta\rho\alpha\kappa\text{-}\omicron\nu \text{ (}\xi\text{-}\delta g\kappa\text{-}\omicron\nu\text{)}. \end{aligned}$$

The parallelism of the liquids and nasals with the semivowels is further exemplified by the absence of any roots containing in , un , im , um , ir , ur . For i and u are not vowels in the same sense as a , e , o : like m , n , l , r they are merely 'coefficients,' as they have been called, of the vowels proper, and only one may succeed the vowel in the root. We may have roots of the form $\pi\epsilon\nu\theta$, but not of the form $\pi\nu$, $\nu\mu$.

The relation of the two forms $\pi\epsilon\nu\theta$, $\pi\nu\theta$ is not to be explained, as by Schleicher, by saying that the former is a 'dynamical intensification' of the latter, an alteration made

for the purpose of expressing changes in meaning, as e.g. between the present *πεύθομαι* and the aorist *ἐπυθόμην*: rather the reduced form of the root is to be considered as parallel to the fuller form, the variation being connected with change of accentuation. Where the accent rests on the root we have the full form, e.g. *πείθων*, where it shifts to the termination, we have the reduced form as in *πιθών*. But it is only in comparatively few cases that the accent as we find it in Greek or any other derived language offers an adequate explanation: and to understand the law, accent must be taken to mean the original Indo-European accent, which has been most closely preserved in Sanskrit (v. Chapter xi).

Vowel-
gradation
in roots.

We may proceed to illustrate the law of vowel-gradation in roots as follows. In non-thematic presents (i.e. those presents in which the termination immediately follows the root without the intervention of a connecting vowel), we find a variation between the full and reduced forms of the root which is determined by the 'weight' of the inflexional termination. The terminations of the singular are 'light,' and in this case we get the full form of the root, and the root is accented. The terminations of the plural are 'heavy,' and we get the reduced form of the root with the termination accented.

Thus *εἶ-μι* Sanskrit *é-mi* plural *ἴ-μεν* Sanskrit *i-más*.

ἴσση-μι *ἴσιᾶ-μεν*.

πίμπλη-μι *πίμπλαᾶ-μεν*.

In the two last instances the shortening of the long vowel in the reduced form corresponds to the loss of *ε* in *ἴ-μεν*.

es-t Sanskrit *ás-ti* *s-unt* Sanskrit *s-ánti*.

ἐσμέν *sumus* *s-más*.

Again in the perfect the evidence of all the related languages goes to prove that originally the singular had the full form of the root with the accent on the root, while the other numbers showed the weak form with the accent on the termination.

Thus from the root *bheugh* Sanskrit *√bhuj* we have—

Sanskrit sing. (*bu-bhoja*) plur. *bu-bhuj-imá*.

Gothic *baug* *bug-um*.

From the root *vert*, Sanskrit $\sqrt{vrt}$ (turn).

Sanskrit sing. *ṇavarta* plural *va-vrt-imá*.

Gothic *varþ* *vaurþ-um* (where *aur* = *r*).

In Greek the form of the singular has gradually encroached on the plural, but in Homer we find instances surviving of the original formations, e. g.:—

sing. $\pi\acute{\epsilon}\text{-}\pi\omicron\iota\theta\text{-}a$	plural $\xi\text{-}\pi\acute{\epsilon}\text{-}\pi\iota\theta\text{-}\mu\epsilon\nu$.
$\xi\text{-}\omicron\iota\kappa\text{-}a$	$\xi\text{-}\iota\kappa\text{-}\tau\omicron\nu$.
$\mu\acute{\epsilon}\text{-}\mu\omicron\nu\text{-}a$	$\mu\acute{\epsilon}\text{-}\mu\alpha\text{-}\mu\epsilon\nu$.
$\omicron\dot{\iota}\delta\text{-}a$	$\dot{\iota}\delta\text{-}\mu\epsilon\nu$.

Fuller instances of this and similar alternations will be given later on.

So far we have considered the alternation of the full and reduced forms of roots. But we saw above that the full root itself appears under two forms, one showing the vowel *e*, the other the vowel *o*. It remains to consider the relation between these two forms.

By the theory of vowel-intensification, as stated by Schleicher, a form like $\lambda\omicron\iota\pi$ in $\lambda\acute{\epsilon}\lambda\omicron\iota\pi\alpha$ is considered as a raising of the form $\lambda\epsilon\iota\pi$ in $\lambda\acute{\epsilon}\iota\pi\omega$. There is, however, no ground for supposing any priority of one form over the other. Each type is peculiar to certain special inflexional formations, the form with *e* (e.g.) to the present, that with *o* to the perfect indicative, and there is no reason to suppose that the present is less or more original than the perfect; both have continually coexisted side by side, and any support that may have been given to the intensification theory by the supposed development of the *o*-sound from the *e*-sound is destroyed by the proof of the original existence of both sounds, which we have given above.

In the present state of our knowledge we can give no certain explanation of the alternation of *e* and *o*. A difference of pitch has been suggested as the cause of variation, but this has never yet been proved. All that we can say is that in certain formations now one vowel appears, now the other, according to fixed rules; but any explanation such as was possible in the case of the reduced roots is at present unat-

tainable. The two must for practical purposes be ranked together as parallel forms, neither having a claim to stand forth as the one root or unity of the group of words in which they appear, to the exclusion of the other.

Reduced
root.

And indeed much the same may be said of the relation of the reduced to the full forms of the roots. We have spoken of the reduced forms as originating in the expulsion of *e* from the strong forms, but this, though convenient in explaining the theory, is not strictly correct. We need not suppose that the reduced root is of later origin than the strong roots. Like them it appears from the first in certain definite formations under definite rules, and as such must rank as original and primitive. The appearance of the weak root is accompanied by a change of accentuation, for its occurrence is accompanied by a shifting of the accent from the radical syllable to the termination. Apart from any assumption of the priority of the full roots, it will be convenient to speak of roots, which have not the *e* or *o* of the full form, as weak or reduced roots.

Three
forms of
the root.

It is clear that the theory stated above is inconsistent with any attempt to regard the root as a single unity common to a group of related words, and we must rather suppose that the root exists from the first in three distinct forms, two of which are strong, the third weak. This complete Ablaut or gradation of three sounds does not, however, exist in all cases, and not in all of those which exhibit the alternation of *e* and *o*.

In the case of other groups of words we can only discover two roots, the strong root characterised by a long vowel (*θη*, *σῆ*, *δω*, *λᾶθ*), and the weak root characterised by a short vowel (*θε*, *σῆ*, *δο*, *λᾶθ*). But it is to be noticed that this Ablaut is governed by precisely the same laws as those given above. Thus the alternation in—

τί-θη-μι

δί-δω-μι

ἴσῃ-μι

τί-θε-μεν,

δί-δο-μεν,

ἴσῃ-μεν,

is clearly completely analogous to that in *εἶ-μι*, *ἴ-μεν*, *εἶ-μι*, *εἶ-μι*. And again the Ablaut *λᾶθ-ομαι* : *ἔλᾶθ-ον* is parallel to that in *πεύθ-εται* : *ἐπύθ-όμην*. The only difference is that

the Ablauts belong to a different series,—*πεύθεται* to what is known as the *ē*-series, *ἵσταμι* to the *ā*-series, *δίδωμι* to the *ō*-series, *τίθημι* to the *ē*-series. This will be illustrated below at greater length.

Before passing on, we may notice a class of forms which seems at first sight to contradict the theory given above.

In verbs belonging to what in Sanskrit grammar is called *Aorist-* the first class, i.e. those in which the stem of the present *presents* tense is identical with the verb-stem, we find a divergence of treatment in Greek. In the case of roots belonging to the *ē*-series the thematic presents of this class regularly contain *ε*, and we have, e.g. *λέγω*, *τρέμω*, *φέρω*, *φεύγω*, *μένω*, *στείχω*, etc. Similarly in Latin we have *lēgo*, *fēro*, *tēro*, *trēmō*, etc., and in Gothic corresponding forms in *i*, *giba*, *sniva*, *nima*, *steiga*, etc. In Sanskrit the corresponding forms show of course an *ā* (*bhārāmi*)¹.

Corresponding to these, in thematic presents of the *ā*-, *ē*-, or *ō*-series we get in Greek, e.g. *θάγω*, *λάθω*, *κάδω*, *λήγω*, *φώγω*, etc.

But side by side with these are a group of presents, apparently of the first class, which show *ā*, *ō*, e.g. *ἄγω*, *γράφω*, *γλάφω*, *μάχομαι*, *ἄχομαι*, *βλάβομαι*, *ὄθομαι*. In Latin we get the corresponding types *āgo*, *cāno*, *scābo*, *cādo*, *ālo*, *tāgo*, *pāgo*, *scāto*, *ōlo*, *lōquor*, in Gothic forms with *ā* (*draga*, *hlaba*, *skaba*, *þvaha*).

Comparing these two types, we get on the one hand Sanskrit *bhārāmi*, Greek *φέρω*, Latin *fero*, Gothic *baira*; on the other, Sanskrit *ājāmi*, Greek *ἄγω*, Latin *ago*. As the first type answers to an Indo-European *bhērō*, the second should answer to an Indo-European *ājō*.

De Saussure, however (p. 159 sqq.), comparing the isolated aorist forms *μακεῖν*, *ταφεῖν*, *φαγεῖν*, *φλαδεῖν*, is of opinion that in these presents quoted above the root appears in a reduced form: that the true present of the root 'ἄγ- is 'ἄγ-,

¹ De Sauss., *Mém.* p. 159; Osthoff, *Z. G. d. P.* p. 116; Brugmann, *Zum heut. Stand der Sprachw.* p. 112.

which may appear in *ᾠέομαι*, and that the form with the short vowel, *ᾠγω*, is a present formed from the aorist stem, which has supplanted the true present with a long vowel (*ᾠγω*). As then *φέρω* corresponds to an Indo-European *bhérō*, so *ᾠγω* would be represented by a form *ᾠgō*, which has, however, completely disappeared.

But if these presents show the reduced root of the aorist stem, we should expect that the accent would fall not on the root, but on the termination, and this is borne out by the facts of Sanskrit. We have there two classes of verbal themes, the first with the full root and the accent on the root (paroxytone), e.g. *bhārāmi* (Indian first class), the second with the reduced root and the accent on the termination (oxytone), e.g. *viçāmi* (Indian sixth class). This latter class of themes existed in the original Indo-European language side by side with the former. In Sanskrit and Zend they have produced both present and aorist forms. In Greek there are no oxytone presents; oxytone verbal themes are only found in the aorist. But it is to be observed that verbal themes with the reduced root, when no form with a strong root exists side by side with them, bear in all save accentuation a close resemblance to the aorist type. Thus by the side of *γλύφειν*, *κλύειν*, *λίττειν*, *στίχειν*, which are classed as presents, we have the isolated aorist forms *δύκειν*, *ἐλ(ῡ)θεῖν*, *μύκειν*, *στυγέιν*, *βραχεῖν* (*βγχεῖν*).

The result seems to be that the Greek and Latin presents of the type *ᾠgo*, *ᾠγω* should be considered in connexion with the isolated aorists of the same type. They agree with the aorist in exhibiting the reduced root and only differ in the accentuation. It is probable therefore that they were originally formed from the aorist stem and were once oxytone, but have in process of time taken the accent of the ordinary presents formed with strong roots. It is just as though, by a contrary process, *ἐλ(ῡ)θεῖν* were to change its accent and approach to the present type *ἐλ(ῡ)θειν*¹. The same explanation will hold

¹ In *γενέσθαι* and *ἐλ-ών* the converse has actually taken place, for these words, though belonging to the aorist type by accentuation and meaning, yet have the full form of the root as in the present stem.

good of the Latin forms like *cādo*, *āgo*, *tāgo*, *pāgo*, etc. (cf. the strong root in *com-pāg-es*).

We are therefore justified in assuming in the case of these aorist-presents, as they may be styled, another form (known as the imperfect-present) exhibiting a full root, and the Ablaut $\acute{a}g\bar{o} : \acute{a}g\acute{o}$ will be precisely parallel to the Ablaut $\lambda\acute{\alpha}\theta\omega : \lambda\acute{\alpha}\theta\epsilon\iota\nu$.

This theory of De Saussure has been accepted by Osthoff (*Z. G. d. P.*, p. 116). Against it Hübschmann (*Das Indogermanische Vocalsystem*, p. 3) argues that an aorist present of the type $\acute{a}g\acute{o}$ would be represented in Sanskrit by **ijami* rather than **ajami*, and that therefore the aorist-present must be represented in Indo-European rather by $\acute{a}g\bar{o}$ than by $\acute{a}g\acute{o}$, and would substitute for the aorist present $\acute{a}g\acute{o}$ and the imperfect-present $\acute{a}g\bar{o}$ the two types $\acute{a}g\bar{o}$ and $\acute{a}g\acute{o}$, corresponding respectively to a Sanskrit **ajāmi* and *ijāmi*.

So far then we have three degrees of Ablaut, two strong and one weak. But further, there is reason to believe that reduced roots, as well as the strong, appear in two distinct forms. In the case of words exhibiting a reduced root containing a semivowel or liquid or nasal sonant, we find a variation of quantity of the root syllables extending throughout the whole of the Indo-European languages, which must therefore be supposed to represent an original variation. In Greek alone, for example, we get the same reduced root under no less than four different forms in $\phi\bar{\upsilon}\text{-}\mu\alpha$, $\phi\bar{\upsilon}\text{-}\sigma\iota\varsigma$, $\acute{\epsilon}\text{-}\phi\acute{\upsilon}\text{-}\eta\nu$, $\acute{\iota}\pi\epsilon\rho\text{-}\phi\text{-}\acute{\iota}\alpha\lambda\omicron\varsigma$. The discussion of this subject is reserved for the appendix to this chapter: it will be sufficient, here to state the results of the investigation.

In every reduced root containing a semivowel or liquid or nasal sonant, the semivowel or sonant may be either long or short. This difference of quantity was originally determined by the absence or presence of a 'secondary accent' (*nebenton*) on the root. The root, when reduced, in no case bore the main accent (*hochton*), but, according to the position of the syllable in the sentence, it might acquire a secondary accent which was weak as compared with the accent proper, but strong as compared with a syllable altogether unaccented. As in the case of a polysyllabic word like *cōntemplātion*, the first syllable, though not bearing the main accent, is, by virtue of its position at the beginning of the word, pronounced with an

Two forms
of reduced
roots.

The second-
ary
accent.

emphasis which is strong as compared with that on the next two syllables, though weak as compared with that on the penult, so in the Indo-European *krudhí* the first syllable will bear a secondary accent when the word occurs at the beginning of a clause or verse, which will be absent when it comes in the middle of a sentence. In the first case, then, the semivowel will be long, in the second case it will be short. The first case will be represented by the Greek *κλῆθι*, the second by the Sanskrit *ḥrudhí*, the Greek having extended to all cases one variety, the Sanskrit having extended the other.

Reduced
roots with
semi-
vowel.

In the case, therefore, of reduced roots containing a semivowel or liquid or nasal sonant, we may conclude that there are two degrees of the Ablaut, one with a secondary accent (*nebentonig*), which we may call Ablaut III, and which has the semivowel long (*i, ū, ē, ō, ȳ, ȳ*), the other altogether unaccented (*tonlos*, Ablaut IV) and with the semivowel short (*ĩ, ũ, ě, ȳ, ě, ě*). There is also some evidence that there was the same variety of the reduced root in the case of words not containing a semivowel, Ablaut III showing a vowel of some sort in the root, though the root is not accented, Ablaut IV having no root-vowel at all. We have, for instance—

	ABLAUT III.	ABLAUT IV.
✓ <i>ped-</i> , <i>pod-</i>	Sk.gen. <i>pad-ás</i> , I.-E. <i>pad-ós</i> ,	<i>pd-</i> Zend <i>fra-bil-a</i> . Gk. <i>ἐπί-βδ-αι</i> .
✓ <i>ed-</i> <i>əd</i>	{ Sk. 2 plur.im- perf. <i>attá</i> , I.-E. <i>əd-té</i>	<i>d-</i> { Gk. <i>ἀρι-σ-τον</i> for <i>ἀρι-δ-τον</i>
✓ <i>sneigh-</i> <i>snigh-</i>	<i>νίφει</i> ,	<i>snigh-</i> <i>νίφα</i> .
✓ <i>bheṃ-</i> <i>bhū-</i>	<i>φῦμα</i> ,	<i>bhū-</i> <i>φῦσις</i> .
✓ <i>ster-</i> <i>stē</i>	{ <i>στροφ-τός</i> } <i>strū-tus</i>	<i>stē-</i> <i>στροφός</i> .

But further, we have seen in the case of the short semivowels and liquid and nasal sonants that they are sonant only before consonants, but consonantal before sonants. The long sonants and semivowels, similarly, have corresponding consonantal forms, viz. *i, u, r, l, m, n*. In the case, therefore,

of roots containing these letters, we must subdivide further as follows:—

ABLAUT III.

1. before
sonants. 2. before
consonants.

✓ *bheu-* *bhu-* *bhū-*
 ē-φῶf-ην *φῦ-μα,*
 ✓ *ster-* *stir-* *stī-*
 Sk. ti-stir-ē *στρω-τός,*
 (perf. mid.)

ABLAUT IV.

1. before
sonants. 2. before
consonants.

bhu- *bhū-*
ἵπερ-φF-ίαλος *φῦ-σις.*
str- *stī-*
str-uō *στρα-τός.*

In roots which do not contain a semivowel, the two degrees of the reduced root are not distinguishable. Thus the present *ἄγω* with the reduced root of an aorist stem, as explained above, belongs to Ablaut III. The participle *ἐπακτός* belongs, under ordinary conditions, to Ablaut IV, but in form does not differ from Ablaut III, because a form like *ἐπι-κτός* (which would be the more regular formation) would not be recognizable as belonging to the same verb.

Again, in cases where Ablaut II contains *ē* not accompanied by a semivowel, this *e* cannot disappear before a consonant in Ablauts III and IV. In Ablaut III, for instance, we can have nothing but *σκεπτός* and *sessus* (*sed-tós*) from the roots *σκεπ-*, *sed-* with Ablaut II, and in Ablaut IV *σκητός* would be unpronounceable. In such cases, therefore, there is no difference between Ablauts II, III, and IV.

Where the second Ablaut contains a long vowel (as in the root *στᾶ*), the distinction between the third and fourth degrees may be preserved. Thus in Ablaut III we get *στᾶτός*, *stātus*, with the long vowel shortened; in Ablaut IV we get *στώ* (for *στ-τύ-ω*) without any vowel at all. The relation of *στᾶ-τός* to *στ-τύ-ω* is the same as that e.g. of *φῖ-τύ-ω* (for *φῦ-τυ-ω*) in Ablaut III to *fū-tu-o* in Ablaut IV. In fact the characteristic of Ablaut IV in all roots is, wherever possible, the complete absence of a vowel.

Ablauts may be classified in six series, according to the vowel that they exhibit in the second Ablaut, which is known

as the middle degree (*Mittelstufe*). We shall thus get the six series of the Ablauts of $\bar{e}$, $\bar{a}$, $\bar{o}$, $\bar{e}$, $\bar{a}$, $\bar{o}$. Under each series we shall expect to find four degrees, but for any root to appear in each of the four degrees is rare.

I. The $\bar{e}$ -series.

The degrees of the $\bar{e}$ -series are as follows :—

ABLAUT I.	ABLAUT II.	ABLAUT III.	ABLAUT IV.
(<i>Accented.</i>)	(<i>Accented.</i>)	(<i>Secondary Accent.</i>)	(<i>Unaccented.</i>)
I.-E. $\bar{o}$	$\bar{e}$	$\bar{a}$	no vowel.
Greek ω	η	$\check{\alpha}$ (?), Sk. $\check{i}$	„
Latin $\bar{o}$	$\bar{e}$	$\check{a}$	„
$\sqrt{dh\bar{e}}$	$\tau\acute{\iota}\text{-}\theta\eta\text{-}\mu\iota$	$\tau\acute{\iota}\text{-}\theta\epsilon\text{-}\mu\epsilon\nu.$	
	$\acute{\epsilon}\tau\acute{\iota}\text{-}\theta\eta\text{-}\nu$	$\acute{\epsilon}\tau\acute{\iota}\text{-}\theta\epsilon\text{-}\mu\epsilon\nu.$	
	$\theta\acute{\eta}\text{-}\sigma\omega$	$\acute{\xi}\text{-}\theta\epsilon\text{-}\mu\epsilon\nu.$	
	$\acute{\xi}\text{-}\theta\eta\text{-}\kappa\alpha$	$\theta\epsilon\text{-}\acute{\iota}\eta\nu.$	
	$\theta\acute{\eta}\text{-}\sigma\omicron\mu\alpha\iota$	$\theta\epsilon\text{-}\acute{\iota}\mu\epsilon\nu.$	
	$\acute{\alpha}\nu\acute{\alpha}\text{-}\theta\eta\text{-}\mu\alpha$	$\tau\acute{\iota}\text{-}\theta\epsilon\text{-}\mu\alpha\iota.$	
	$\theta\acute{\eta}\text{-}\kappa\eta$	$\acute{\epsilon}\text{-}\theta\acute{\epsilon}\text{-}\mu\eta\nu.$	
		$\theta\acute{\epsilon}\text{-}\tau\omicron$ (Sk. <i>ádhitá</i>).	
		$\theta\epsilon\text{-}\acute{\iota}\tau\omicron.$	
		$\theta\epsilon\text{-}\tau\acute{o}\varsigma$ (Sk. <i>hitás</i>).	
		$\theta\acute{\epsilon}\text{-}\mu\alpha.$	
		$\theta\acute{\epsilon}\text{-}\sigma\iota\varsigma.$	

In the third Ablaut we find in Greek forms like $\theta\epsilon\rho\acute{o}\varsigma$, where a comparison of the other languages would lead us to expect rather $*\theta\alpha\rho\omicron\varsigma$, as the *svarabhākti* vowel or *schwa* is ordinarily represented in Europe by $\check{a}$, corresponding to a Sanskrit $\check{i}$. Thus we have in Latin *cātus*, *dūtus*, *stūtus*, *sūtus*. It is probable that the ϵ , in $\theta\epsilon\rho\acute{o}\varsigma$ and similar forms in Greek, is due to the η of other forms of the verb, just as the parallel form $\delta\omicron\rho\acute{o}\varsigma$ (Lat. *dūtus*) owes its $\omicron$ to ω in $\delta\acute{\iota}\delta\omega\mu\iota$ (*M. U.* iii. 101; De Sauss. 145, 179).

Ablaut I appears in Sanskrit 3 perf. *da-dhāu*, and in Gothic *dōms*, A.-S. *dóm*, English *doom*; possibly also in *sacerdōs* for $*sacro\text{-}dlh\bar{o}\text{-}ts$. Ablaut III is seen in e.g. Latin *credītus* for

**credātus, credētus*, and possibly in *fa-c, fācio* (*Z. G. d. P.* 188).

Ablaut IV does not appear in Greek or Latin, but is seen in many Sanskrit forms, e.g. *da-dh-māsi, dha-t-thās* (for *dha-dh-tās*), etc.

However *dadhmāsi* corresponds in almost every way to *τίθεμεν*, which therefore probably is for *τι-θ-μεν*, the *ε* being a *svara-bhākti* vowel, which takes that form rather than any other because of *η* in other forms (compare *ἴσθημι : ἴσταμαι* beside *τίσθημι : τίθεμεν*).

θεσμός, Doric *τεθμός*, Locr. *θέθμος*, seems to be a reduplicated form for *θε-θ-μός*. Compare *δεσμός* = *δε-δ-μός*.

	I.	II.	III.	IV.
✓ <i>sē</i>				
Gk. ἀφέωκα	ἀφ-ί-η-μι	ἀφ-ί-ε-μεν.		
ἀνέωνται	ἀφ-ί-η-ν	ξ-σαν.		
ἀνέώσθαι	ἦσω, ἦκε, ἔ-η-κε	ἱ-ε-μαι.		
(quoted as perf.	ἦμα	ἱ-έ-μην.		
forms in Herodian	μεθ-ή-μων	ἐτός, ἐτέος.		
and elsewhere,				
De Sauss. p. 140).				
Lat.	sē-vi	sā-tus	{ sero (for	
	sē-men	serimus	{ si-s-o).	
	(cf. Germ. <i>Saat</i> ,	(for si-sā-mos),		
	Engl. <i>seed</i>)	(<i>Z. G. d. P.</i> 245).		
✓ <i>dē</i>	δίδη (Λ. 105)	δέ-δε-μαι.		
	ἔδησε	δέ-δε-το.		
	δέ-δη-κα	δέ-σις.		
	διά-δη-μα	σύν-δε-ρος.		
		δι-δέ-ασι		
		(Xen. <i>An.</i> 5.8.24).		
✓ <i>mē</i>	mētior	μέτρων.		
✓ <i>phē</i>				
A.-S. <i>spōwan</i> ,	{ spēs (?)	spātium (?).		
Engl. <i>speed</i>				
(where <i>ē</i> = orig. <i>ō</i>)				

I.	II.	III.	IV.
✓ $\bar{e}gh$.	ἡμί (for ἡχ-μί) ἡ-σί (Aeol.). ἡ-ν, ἡ (for ἡκτ). adāgium ($\bar{a}gh$, with $\bar{a}$ for $\bar{e}$ from Abl. III).	aio for āh-jo.	
✓ $vr\bar{e}g$	ἔρρωγε ῥωγ-αλέος ῥώξ ῥωχ-μός	ῥήγ-νυμι ῥήξ. ἔρρηξα. ῥήγμα.	{ ἔρράγην, ῥάγας may belong either to Ablaut III or IV.
✓ἀρηγ	ἄρω-γῆ ἄρωγ-ός	ἀρήγ-ειν. ἀρήξειν.	
✓(σ) $\bar{l}eg$	λήγ-ειν λήξ-ω ἄλ-ληκ-τος	λαγρός. λαγ-ών. laxus (Engl. <i>slack</i>).	
Optative suffix $\bar{x}\bar{e}$.	ἐ(σ)-ίτη-ν s-iē-m	ε(σ)-ί-μεν. s-i-mus.	
✓ $r\bar{e}$	rē-ri	{ rā-tus. rā-tio.	
✓ $k\bar{e}d$	έκε-κήδ-ει cēd-o	{ κεκάδ-οντο. κε-κάδ-ών. cādo(?).	

✓ $v\bar{e}$. This seems to be one of those roots (of which there are not a few, Hübschmann, p. 85; De Sauss. pp. 257-270) which in no known form exhibit a true Ablaut, though it is possible that such an Ablaut may have once existed. In Greek we get ἀησι (for $\bar{a}$ -Fη-σι), $\bar{a}$ -η-τον ($\bar{a}$ ητον, Σ. 410, is abnormal), $\bar{a}$ -ή-μεναι, $\bar{a}$ -η-το, $\bar{a}$ -ή-της, in Latin *vēntus*. In Greek we have $\bar{a}$ -έ-ντες, but here the shortening of the long vowel is not original, but due to the special tendency in Greek and Latin to shorten a long vowel when followed by a semivowel and a consonant (cf. p. 183).

Special cases of irregularity between Greek and Latin are

$\beta\bar{a}$ -μεν beside $b\bar{e}$ -tere (but the connexion is doubtful), πεντή-
κοντα beside *quinginta*, θράνος beside *frēnum*, etc.

The typical Ablaut of the $\bar{a}$ -series is—

The
 $\bar{a}$ -series.

I.	II.	III.	IV.
I -E. $\bar{o}$	$\bar{a}$	$\bar{e}$	no vowel.
Greek ω	$\bar{a}$ (η)	$\bar{e}$	”
Latin $\bar{o}$	$\bar{a}$	$\bar{e}$	”

✓*sthā*

ἴ-στη-μι	ἴ-στα-μαι.
στή-σω	ἔ-στα-μεν.
ἔ-στη-σα	ἰ-στά-ναι.
ἔ-στη-ν	ἔ-στά-ναι.
στή-μῶν	στα-ίη-ν.
σύ-στημα	{ στα-τός (Sk. <i>sthi-tās</i>). στα-τήρ.
stāre	stā-tus.
stātor	stā-tim.
stāmen	stā-tor.
	stā-tio.

Cf. Goth. *stolo*, sistimus (for *si-stā-mos*).
Engl. *stool* stetimus (for *se-stā-mos*,
(στήλη), cf. ἔ-στα-μεν).
which may Cf. Goth. *stands*,
be either of (Engl. *stand*), *stath*
1st or 2nd (-*stath*); O.H.G. *stat*
degree. (Engl. *stead*), which
seem to be of Abl. III.

Ablaut IV may appear in *ste-ti* by metathesis for *se-st-i* (cf. *de-d-i*) and is
certainly seen in Sanskrit *ta-sth-atuṣ*, *ta-sth-ūs*, etc.

✓*bhā* φωνή

φημί	φα-μέν.
ἔφη	ἔ-φα-σκε.
προφήτης	ἔ-φα-το.
φήμις	φά-σθαι.
φήμη	φά-μενος.

I.	II.	III.	IV.
		παλαί-φα-τος.	
		πρό-φασις.	
		φά-τις.	
	fāri	fā-teor.	
	fābula.		
	fāma.		

fātum should rather be **fātum* (cf. *dātum*, *stātus*), but has been assimilated to the first conjugation.

✓ *gā* or *gḡ*.

βωμός	βίβατι (3 sing. ¹)	βιβά-ζω	βιβάς. (for βιβήτς).
	ἔβη	βιβάσθων.	
	ἐβήσετο	βίβασις.	
	βέβηκε.		
	ἐπιβήτωρ.		
	βῆμα.		
	βεβηλός.		
✓ <i>plāg</i>	πέπληγον	ἐξεπλάγη.	
	πληγή	{ ἐξεπλάγησαν (may be Ablaut IV).	
	plāga	plango (for <i>plāg-no</i>).	
✓ <i>sār</i> σωρός	σεσάρως	{ σαίρειν, σεσᾶρνῖα.	
✓ <i>lāθ</i>	λήθει	ἔλαθε.	
	λήσει	λάθετο.	
	λήσομαι	λελαθέσθαι.	
	λέληθε	{ λέλασται, λα-ν-θ-άνω, ᾗ-λασ-τος (X. 261).	

¹ *βίβατι* occurs as 3 sing. in a Laconian epigram in Pollux 4. 102, and is an alteration of Curtius for the MS. *βιβαντι*. Osthoff accepts *βι-βαν-τι*, which he conceives to be an alteration of *βι-βεν-τι*, I.-E. *gi-gém-ti* (with a strong root of *ē*-series), the *α* of *βιβαντι* being due to that of *βιβατον*, *βίβαμεν*, etc. (where *α*=*η*). The 3 plural would be *βιβαντι*, like *ἴσταντι*. But if the root is *gem*, the third plural should rather be *gi-gm-ýtēti*=*βι-βμ-αντι*. *βιβαντι* may have followed the analogy of *ἰστάς* (= *ι-στᾶ-ντς*), as has been the case in *βιβάς* (*Z. G. d. P.* p. 375 n.).

I.	II.	III.	IV.
✓ $\theta\bar{a}\gamma$ τεθωγμένος, θήγει. (Doric form in Hesych.).	θήγεις. θηγάνη.		
✓ $\tau\bar{a}\kappa$	τήκω τήγανον τηκεδών.	ἐτάκην. τακερός.	
✓ $sn\bar{a}$	ναρός νᾶμα νᾶσος. Nāĩds. nāre.	nātare. nātrix.	
✓ $\mu\bar{a}$	panis pabulum pāstor pāvi.	πατέομαι. πανία. ἄπᾶστος.	

The last two may belong to the $\bar{o}$ -series.

✓ $p\bar{a}g$	πήγνυμι	ἐπάγην.
	pāx	{ pango (for pāg-no), pāc-iscor.

We may perhaps add—

$\bar{o}$	$\bar{a}$	$\bar{a}$
ὠκύνς, ocior		ācupedius.
cicōnia		cāno.
rōdo	rādo.	
scōpae	scāpus	scāpulae.
ὠμός		āmarus.
λῶβη	lābi.	

But in nearly every case it is doubtful whether the word belongs to the $\bar{a}$ - or $\bar{o}$ -series. In *ignārus* beside ✓*gnō* (which is everywhere else invariable) there may be some confusion with the ✓*gen* or by metathesis *gnē* in e.g. γνήσιος.

ō-series.

ō-series.

The type is:—

	I.	II.	III.	IV.
Indo-European	ō	ō	ə	No vowel.
Greek	ω	ω	α(?)	„
Latin	ō	ō	ă	„

It will be noticed that here the two first degrees everywhere coincide.

	I or II.	III.	IV.
✓dō.	δίδωμι	δίδομεν	{ Sanskrit <i>devā-t-ta</i> = <i>deva-d-ta</i> .
	ἐδίδω	ἐδίδοσαν.	
	δώσω	ἐδομεν.	
	ἔδωκε	ἔδοτε.	
	δέδωκα	ἔδον.	
	δωτήρ	ἔδοσαν.	
	δώτωρ	δέδοται.	
	δώρον	δοίην.	
	δώτις	δοῖμεν.	
		δίδομαι.	
		δοτήρ.	
		δόσις.	
		δανείζω.	
	dōnum	dānunt	
	dōnare	dātus	
	dōs	dātor.	
		datio.	
			de-d-i.
			{ de-d-imus (cf. ste-t-i).

The *o* in the third Ablaut in Greek is due to the *ω* of other forms, but the proper representative of the *Schwa* is preserved in *δανείζω*, cf. Sanskrit *a-di-ta* = *ādotos*.

✓gō	βωτιάνειρα	βόσκει.
	βώτωρ	βοτόν.
	συβώτης	πουλυβότειρα.

I or II.	III.	IV.
παμβῶτις	βοτήρ.	
	βοτάνη.	
	βόσις.	
	αίγίβοτος.	
	συβόσιον.	
	πρόβατον.	
	πρόβασις.	

Here again the α of Ablaut III. is only preserved in πρόβατον, πρόβασις.

✓ $p\bar{o}$ (drink), πῶνω (Aeol.)	ποτόν	πίνω.
πέπωκα	πέποται	πίομαι.
πῶμα	ποτός	πίθι.
ἄμπωτις	πόμα	$\left\{ \begin{array}{l} \text{πίσω,} \\ \text{πιπίσκω, from} \\ \text{a form } p-y- \\ \text{no, etc., (K.} \\ \text{Z. xxvii. 420).} \end{array} \right.$
potor	πόσις.	
potus	πότης.	
potio	ποτής.	
poculum	ποτήριον.	
potare.		

The forms in the fourth column seem to come from the fourth Ablaut of ✓ $p\bar{o}$ increased by y . The relation of *biho*, Sanskrit *pibami* is doubtful. The Ablaut *poi-* (Sanskrit *pāy-āna*) : *pī* will be related as $\xi(\sigma)$ -ίη-ν to $\epsilon(\sigma)$ -ῖ-μεν.

✓ $p\bar{o}$ (guard)	πῶ-ν	πο-ιμήν.
	πῶμα	πο-ίμνη.
✓ $k\bar{o}$	κος, κῶ-νος	κᾶtus.
✓τρωγ	τρώγω	ἔτραγον.
	τέτρωκται.	τράγημα.
	τρώζονται.	
✓ $F\omega\theta$	ῶθέω	$\left\{ \begin{array}{l} \text{ἐλνοσ(φυλλος)} \\ \text{(= ἐν-φοθ-σι-} \\ \text{φυλλος).} \end{array} \right.$
	ἔ-Fωσε.	

ē series.*ē*-series.

This is by far the most common of all, both in roots and suffixes. The type is :

	I.	II and III.	IV.
Indo-European	<i>ē</i>	<i>ē</i>	No vowel.
Greek	ο	ε	"
Latin	<i>ē</i>	<i>ē</i>	"
ἄχος		ἔχω	{ ἔ-σχ-ον, σχ-εῖν, ἴσχω (for σι-σgh-ό).
ἐποχή			
ἄχος		ἔχεσφιν (Hesych.).	
ἄχέομαι.			
τόκος		ἔτεκον	τίκτω (for τι-τκ-ω).
τέτοκα.			
ψόγος		ψέγω.	
		ἀμφι-έπω	{ ἔπ-ε-σπ-ο-ν, σπ-έσθαι, ἔ-σπ-έσθαι.
ποτή, πότμος		πέτομαι	{ πτ-έσθαι, ἔ-πτ-όμην, πι-πτ-ω.
φόβος		φέβομαι.	
ὄψ		ἔπος.	
πόπανον		πέσσω (for πεqῖω).	
ὄργανον		ἔργον.	
σκοπός		σκέπτεσθαι.	
λοπός		λέπω.	
ῥόφος		ῥέφω	ἔρρῦν (= ἔ-σρφ-ην).
χοφή, οἶνο-χόφ-ος		χέφω	κέ-χυν-ται.
θοφός		θέω.	
δέδορκε		δέρκομαι	ἔδρακον, δράκων.
φόρος, φορέω, } φόρτος		φέρω.	
ἀγορά		ἀγέροντο	{ ἀγρ-όμενος, cf. ὁμή- γ-υ-ρ-ις.
ἄστεροπή			ἀστράπτειν.
δρόμος, δέδρομε			ἔδραμον.
βρόμος		βρέμω.	
δορά		δέρω	δεδαρμένος.
δροφή, ὄροφος		ἔρέφω.	

I.	II and III.	IV.
πτόρος		ἐπταρον.
τροπέω, τρόπος, τροπή, } τέτροφα	τρέπω	{ τετραμμένος, τραπέσ- θαι.
διέφθορα, φθορά, φθόρος φθερῶ		φθαρήναι, ἐφθαρμένος.
ἐγρήγορε	ἐγερῶ	ἐγρέσθαι.
ἵππημολγοί	ἀμέλγω.	
βολή	βέλος	βαλεῖν, βάλλω.
λόγος, συλλογή, εἵλοχα	λέγω.	
λόχος, ἄλοχος	λέχος.	
μολπή	μέλπω.	
κλοπή, κέκλοφας	κλέπτω	κλαπέντες.
βουκόλος	κέλεται	ἐκέλετο.
στόλος, στολή	στελῶ	ἔσταλμαι, σταλέντες.
γονή, γόνος, γέγονα	γένος	γίγνομαι, γέγαμεν.
κατα-κονά		ἔκανον.
πατροκτόνος, ἔκτονε	κτευνῶ	κτάμενος, ἔκτανον.
φόνος		πέφεται, ἔπεφνε.
μέμονα	μένος	μέμαμεν.
μονή	μένω	μίμνω.
πόνος	πένομαι.	
τόνος, τουή	τευνῶ	τατός, τέταται.
δύμος	δέμω.	
νόμος, νομή	νέμω.	
πομπή, πέπομφα	πέμπω.	
τομή, τόμος	τέμνω	ἔτετμον.
λοιπός, λέλοιπε	λείπω	ἔλιπον.
στοῖχος	στείχω	ἔστιχον, στίχος.
τοῖχος	τεῖχος.	
ἀλοιτής	ἀλείτῃς	ἀλιτεῖν.
οἶδε	εἶδομαι	ἴδμεν, ἰδεῖν.
πέποιθε	πείθω	ἐπέπιθμεν, πιθέσθαι.
οἶμος	εἶμι	ἴμεν.
σπουδή	σπεύδω.	
εἰλήλουθα	ἐλεύ(θ)σομαι	ἤλυθον.
	φεύγω	ἔφυγον.
ἀκόλουθος	κέλευθος.	

Latin instances are comparatively rare, but we may notice *toga : tego—moneo : mens—noceo : nex*, etc. Most of the known instances will be given in the Appendix on the Grammatical Function of Ablaut.

Ǻ-series.

Ǻ-series.

The type is :—

I.	II and III.	IV.
Indo-European <i>Ǻ</i>	<i>Ǻ</i>	No vowel.
Greek <i>Ǻ</i>	<i>Ǻ</i>	"
Latin <i>Ǻ</i>	<i>Ǻ</i>	"
<i>κυναιγός</i>	<i>Ǻγω, Ǻξω, Ǻγαγον</i>	{ <i>δ-γμος (δ-γ-μος)</i> , where <i>o</i> may be prothetic; cf. San- skrit <i>j-man</i> .
<i>ambāges, coāgulum</i>	<i>Ǻγρός.</i>	
<i>exā(g)men</i>	<i>ago, agilis, ager.</i>	
<i>Ǻγός, Ǻπακτος</i> probably belong to the third degree, which, however, here cannot differ from the second (p. 235).		
<i>δέ-δῆF-ε</i>	<i>δα-λω, δε-δαν-μένος</i>	<i>δύη (δF-η).</i>
<i>δήF-ιον</i>	<i>δά-ηται, δάος, δαίς.</i>	
	<i>ἀπό, ab</i>	<i>po-situs.</i>

This is the explanation given by Osthoff of the Latin prefix *po-* (*Z. G. d. P.* 25, *M. U.* iv. 340).

<i>μῆκος, μήκιστος</i>	{ <i>μακρός, μάσσον,</i> <i>μακεδνός.</i> <i>Μακέδονες, cf. macer.</i>	{ <i>αἶθει, αἰθόμενος,</i> <i>αἰθήρ, αἶθρη.</i> <i>aestus, aestas</i>	{ <i>Idus (day of the full moon).</i> <i>ἰθαρός.</i>
<i>ἡφώς, αὔσως (Aeol.)</i>			
<i>ἔως (Attic metathesis)</i>	{ <i>αὔριον.</i> <i>Aurora.</i>	{ <i>γαίω, γαῦρος.</i> <i>gaudeo.</i>	
<i>ἥρι.</i>			
<i>γέγηθε, γέγαθε (Pindar)</i>	{ <i>γαίω, γαῦρος.</i> <i>gaudeo.</i>		
<i>gavisus</i>			

I.	II and III.	IV.
κῆραι	{ καίω, κάύσω, κέκανμαι, καῶμα.	
clāvis, κλαῖς	clāudo.	
So in the verbal suffixes -μαι, -σαι, -ται, -αται, -μι, -σι, -τι, -εντι,		

ø-series.

ø-series.

The type is :—

	I.	II or III.	IV.
Indo-European	ō	ø	No vowel.
Greek	ω	ο	„
Latin	ō	ø	„
✓ <i>oq</i>	ὀπωπα, ὀπωπή ὠψ, βοῶπις, κυνώπις ἐνωπή	ὀψεται, ὀσσεσθαι. ὀψις, ὀπτήρ. ὀπή, ὄμμα. ὄσσε. oculus.	
✓ <i>od</i> (hate)	ōdi, exōsus	ōdium, odiosus.	
✓ <i>od</i> (smell)	ὀδωδε, ὀδωδή ἐὺώδης	ὄζει, ὄδμή. olere, olidus, odor.	
✓ <i>or</i>	ὄρωρε	ὄρσο, ὄρμενος. ὠρορε, ὄρνυται. ὠρτο. oritur, ortus, origo.	
✓ <i>vor</i>	ὀρώρειν, ὠρα πρωί	ὄρονται, οὔρος, ὀράω. πρό, πρόμος prō (lengthened as a monosyllable). fōdi	πρ-ίν.
		loquor, locutus	{ λάσκω (for λακ- σκω), ἐλακον, λελα- κῦα.
	ὄλωλε	{ ὀλεῖται, οὐλόμενος, ὀλέκειν, ὀλετήρ.	

I.

δμῶμοκε

ἀνωμοσι.

ὠλένη

II or III.

δμοῦμαι, δμυμι.

ulna (?).

IV.

Roots with
constant
long vowel.

We may now go on to consider some special points in connexion with the theory of Ablaut.

We have already noticed the fact that there are certain heavy roots (i. e. those of the long vowel series) where the long vowel remains permanent and is never reduced. This fixity, however, may be a later development superseding an original Ablaut. Such roots are, for instance, $\sqrt{v\bar{e}}$ in δ-ημι (given above), Sanskrit *vāti* (third singular), $\sqrt{pl\bar{e}}$ in Sanskrit *prāsi*, πλῆτο, *plēnus*, etc., $\sqrt{sn\bar{e}}$ in νῆμα, *nēvi*, Gothic *nēpla*, O. H. G. *nājan*. Compare the whole group of words connected with τέ-τρη-ται, ῥήτωρ, δ-μη-τος, δι-ζή-μενος, κι-χῆ-μεναι, and ἡμι-, *sēmi*-, Sanskrit *sāmi*; μῆν, *mēnsis*, Gothic *mēna*, Sanskrit *mās*, in none of which do we find any cognate form with a short vowel, or at any rate a short vowel that is certainly the representative of a primitive short vowel.

Confu-
sion of
series.

A second point to notice is that owing to the existence of the same vowel in different Ablaut-series, the series tend eventually to get confused with one another. Thus the fact that the vowel that amplifies a nasal sonant in Greek is a tends to cause many words that really belong to the *ē*-series to pass to the *ā*-series. Thus *χαρδάνω* is a nasalised present from a root *ghend*, *ghnd*, as in *pre-hend-o*, but it has passed entirely into the *ā*-series in *κέχαρδα*. The true vowel is seen in *χείσομαι* for *χενδοσομαι*. So *πάσχω*, *ἐπαθον*, *πάθος*, etc., might make us suppose we were dealing with an *ā*-root, if it were not for *πέπονθα*, *πένθος*, *πείσομαι* (*πενθ-σομαι*).

By a similar confusion, roots of the *ē*-series have passed into the *ē*-series. For instance the Gothic *sētum* corresponds to an Indo-European *se-sd-mem* (reduplicated), which regularly became *sēdmem*. In *sēdmem*, however, the stem was naturally taken to be *sēd-*, and accordingly, though the root *sēd* belongs to the *ē*-series, which does not properly show *ē* in any degree, yet a long *ē* of a secondary origin comes in this way to be

considered as an original Ablaut of the *ě*-series. It is by the analogy of cases like this that we get forms with *ē* from roots which cognate forms show to belong to the *ě*-series. Thus we have *μῆδ-ος, μήστωρ*, O. H. G. *māza*, German *Māss* by the side of *μέδ-ω, mōdus*, Gothic *mita* : *μέρ-μην-α* by *μέρ-μνα* : *tēg-ula* beside *tēgo* : *rēg-ula* beside *rēgo*, etc. *Ē* also appears in the *ě*-series owing to the contraction of the augment with the following vowel. Thus Indo-European *e-ēl-a = ēda*, Sanskrit *āda*, Latin *ēdi* (beside *ēdo*), (cf. I.-E. *e-es-a*, Sanskrit *āsa*, Greek *ἦα*), and long *ē* thus appearing as an apparently regular member of the *ē*-series, it was but a further step to introduce into this series *ō*. For *ō* : *ē* was a regular Ablaut, and *ē* : *ě* had come to be thought one: the two together naturally produced a triple Ablaut *ō* : *ē* : *ě*. Hence *ěd-ωd-ή* (a reduplicated form) from the root *ěd*.

Once more, the Ablauts *ē* : *ě* and *ā* : *ǣ* are regular, and these by a natural confusion give rise to an Ablaut *ē* : *ǣ*. Hence perhaps *cēlo, cālīgo, supercilium* ; *sēca* (said to be for **seca*, cf. *συσπicio* beside *συσπicio*), *sēcare, sǣxum*.

Again, *ō* appears in the *ě*-series by a different process. The nom. sing. of consonantal stems, as we shall see later, was formed by lengthening the vowel of the accus. stem, without adding *s*. Thus we get *ἡγεμών, ἦώς* (Sanskrit acc. *uṣásam*), *πειθῶ* (stem ends in *-οι*, K. Z. xxvii. 371), Sanskrit *gāús, rák, pád*. Thus we should originally have had the series:—

Indo-European nom. *pód*, acc. *pódh*, gen. *pedós*, or *plós* (*bdós*).

cf. Dor. *πῶς* *πόδα* *pedis*, Zend *fra-bd-a*.

But series of this type give *ō* as an apparently regular member of the Ablaut *o* : *e*, i. e. the *ě*-series. Accordingly on this analogy we get the following groups:—

κλώψ	κλοπή	κλέπτω	ἐκλάπην.
σκῶψ	σκοπέω	σκέπτομαι.	
παραβλώψ		βλέπω.	
φῶρ, fūr	φόρος	φέρω.	
δῶ, δῶμα	δόμος	δέμω.	
τρωπάω	τρόπος	τρέπω.	
τρωχάω	τροχός	τρέχω.	

στρωφάω	στρόφος	στρέφω.
πωλέομαι		πέλομαι.
πωτάομαι	ποτέομαι	πέτομαι.
νωμάω	νόμος	νέμω.

Cf. *mō-s*, *mē-tior*, μέτρον, and *plōrare* beside *plēre*.

There are other cases of abnormal relations between vowels which are certainly not original, but cannot yet be satisfactorily explained (cf. pp. 72-76).

Thus we have:—

πλινναμαι	: πελάω.
πίτνημι	: πετάννυμι.
σκίδνημι	: σκεδάννυμι.
κίρνημι	: κεράννυμι.
πίσυρες	: Aeol. πέσσυρες.
νύξ	: nox, Sanskrit <i>nakta</i> , Gothic <i>nahts</i> .
ανώννυμος	: ὄνομα, nōmen.
δυνξ	: Sanskrit <i>nakhā</i> .
γυνή	: Boeotian βανά (p. 134).
λύκος	: Sanskrit <i>vṛka</i> , Gothic <i>vulfs</i> (p. 127).
κύκλος	: Sanskrit <i>cakrās</i> , Gothic <i>hwehla</i> .
μύλη	: mola.

There are also instances which make it impossible to deny the existence of Ablauts *a : o* and *a : e*, as isolated phenomena, but we can in these cases establish no general law.

Thus we have:—

ῥβρια	: κόλ-αβρος, aper (Curt. <i>G. E.</i> p. 373).
κόβᾱλος	: καύαξ, cavilla.
σόςος, σόω, σῶος	: σαώτερος, sanus.
λογγάζω, longus	: λαγγάζω.
μόννος, monile	: μάννος.
ὄμπνη (opes ?)	: ἄφενος, cf. ap-tus : op-timus.
doceo	: διδάσκω (for δι-δακ-σκω).
urupa	: ἔποψ.

But ἔποψ is by popular etymology connected with ἐπόπτης (ἐποψ ἐπόπτης τῶν αὐτοῦ κακῶν Aesch. *Frag.* 291), and *urupa* would be by assimilation in an onomatopoeic name.

orcus	: arx.
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focus	: fax.
jocus	: jacio.
ad-ol-esco	: alere.
pollere, u-pil-io	: Pales.
οἶδμα	: æmidus.
οἶκτος	: aeger.
ὄϊς, ovis	: avilla, avena (but see p. 187).
loqui	: λάσκειν, ἔλακον.
domare	: δαμᾶν.
portio	: pars.

In some cases the *o* in Latin may be due to a liquid sonant, and the *a* in Greek to a liquid or nasal sonant.

Cases of an Ablaut *a* : *e* not to be accounted for by the ordinary theory are:—

ardea	: ἑρωδιός.
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Possibly both represent an original *ǵdi*, the *ε* in Greek being prothetic.

aries	: ἔριφος.
nactus	{ : ἐνεγκεῖν (for ἐ-νε-νκ-εῖν, implying a strong √νεκ).
margo	: merges.
man-cus	: men-da.
vas (vād-)	: ἄ-φεθ-λον.
maneo	: μένω.
fastigium	: festuca.
hara	: her-ctum, cf. co-hors.
malus	: μέλας.
rätis	: re(t)mus, ἑρετμός.
quattuor	: τέσσαρες.

In few, however, of these cases can the connexion be considered certain. Many contain a liquid or nasal, and the treatment of long sonants in Latin is too doubtful for us to express any certainty as to the relation; *rätis* may be for *rates*, and be related to the long *η* in *τρήρης*, as *dätus* in *creditus* to *τῆ-θη-μι*.

CHAPTER XI.

ACCENT.

Import-
ance of
Accent.

No complete and consistent theory of the history of accent in the Indo-European languages has as yet been attained, and indeed it is only recently that the question has come to be of scientific importance. A few years ago the fact that *πόδα* was paroxytone but *ποδός* oxytone was one to be remembered for the purposes of exact scholarship, but had no bearing on the theory of language as a whole. But later hypotheses have connected all the phenomena of Ablaut and inflexion with those of accent; the great principle known as Verner's law has illustrated the original accentuation of the North European languages, established its relation to that of South Europe, and shown that both systems are to be traced back to some one system prevailing in the original Indo-European language. It therefore becomes of more importance to ask what this accent is that bears so important a part in the development of language, and how it comes to pass that the system of accentuation in Sanskrit, for instance, is so different from that obtaining in Greek.

Meaning
of Accent.

By the term accent in its widest sense we understand (1) the relative *stress* or (2) the relative *pitch* with which the different parts of a word or sentence are pronounced. That is, the question of accent is concerned with the laws which apply to the synthesis of combined sounds. We have already remarked, in dealing with the different letters, that they do not actually exist as individual sounds, but only in the combinations of the spoken language. The division of the elements of speech into syllables, words, and sentences is partly logical, partly due to considerations of convenience, and only in part phonetic. As a collection of mere sounds, language is not

divided into words or sentences: this division results only from attending to the meaning that these sounds convey. But the division into syllables is more entirely a phonetic question. If sentences were uttered with the same force throughout, the question of a division into syllables would not arise. But as a matter of fact the different elements that compose any group of sounds are uttered with various degrees of force, which can be infinite in number. It is this that we mean by the *expiratory* accent, which depends on the stress, the degree of energy or strength of voice with which a sound is pronounced.

On the other hand there is also a variation in the tone or pitch with which different syllables are pronounced. This variation consists in a raising or lowering of the pitch of the voice, and constitutes the musical or *chromatic* accent.

No Indo-European language employed exclusively either the expiratory or the chromatic accent, but one or other always predominated. In the classical languages, for instance, the main principle of accentuation was musical, and hence the name *προσῳδία* given to accent. In the languages of North Europe the principle was, as in our own language, expiratory, though of course differences of pitch were also employed. In a language like French the distinctions of stress are less marked and the syllables are nearly uniform.

The questions whether the accent of Greek and Latin was identical in nature, how far the accent is to be considered purely expiratory, how far chromatic, and how we are to reconcile accent with the phenomena of quantity and rhythm, are too complex and too much disputed for us to enter into them at any length here. But we may remark that, if the accent were purely chromatic, it is difficult to see how the tendency should have arisen to draw back the accent from the end of the word, or how it should have come to stand in such close relation to the phenomena of Ablaut.

The importance of a consideration of accent in the comparison of the Indo-European languages can best be illustrated by the principle known as Verner's law. The law of

Expiratory
accent.

Chromatic
accent.

Accent in
Greek and
Latin.

Grimm's
law.

the permutation of consonants between the languages of Northern and Southern Europe was formulated by Jacob Grimm, and established a fixed relation between the consonantal sounds of German and the classical languages of Sanskrit, Greek, and Latin, which here represent the original Indo-European language. Where Greek and Latin show Aspirates, German shows Mediae; where Greek and Latin show Mediae, German shows Tenuēs; where Greek and Latin show Tenuēs, German shows Spirants or Fricative sounds.

The results may be grouped as follows :—

I.-E. Tenuēs *k, t, p* = Germ. Spirants *h, th, f*.

I.-E. Mediae *g, d, b* = Germ. Tenuēs *k, t, p*.

I.-E. Aspirates *gh, dh, bh* = Germ. Mediae *g, d, b*.

The
German
languages.

By the word 'German,' we understand the original German language. The German or Teutonic languages, as we have already seen (p. 34), fall into three groups—the Gothic, the Scandinavian, and the West German. The first two may, for philological purposes, be classed together as East German. Of these Gothic is phonetically the type of the original German language. It was divided into the languages of the East Goths or Ostrogoths, and the West Goths or Visigoths. Of the language of the Ostrogoths there are no remains. The language of the Visigoths is known through the fragments of the Bible of Ulphilas (A. D. 311); it still survived to some extent as a spoken language in the Crimea till the 16th century.

The oldest remains of the Scandinavian languages (p. 34) date from the 12th century. These languages are closely akin to the Gothic.

The history of the West Germans is complete confusion until the conquest of Britain in the 6th century. Eleven main tribes are to be distinguished—Lombards, Burgundians, Bavarians, Alemanni, Franks, Hessians, Thuringians, Angles, Saxons, Jutes, and Frisians.

East and
West Ger-
man.

In the first instance, West is distinguished from East German by the inflexion of the verb. The East Germans

formed the 2nd sing. pret. of strong verbs in *-t* (*namt, gift*), the West Germans in *-i* (*námi, gábi*), but from the beginning of the literary period other distinctions begin to appear. The history of the Anglo-Saxons and Frisians from the 6th century is, for political reasons, distinct. The remaining languages have three periods, distinguished as Old, Middle, and New.

The Old High German period extends to 1100 A. D., with a literature of glosses, glossaries, ecclesiastical translations, hymns, and some popular poetry among the Franks of the upper Rhine, the Alemanni, and Bavarians. The Lombards, Burgundians, and West Franks became completely Romanised, and their languages disappear.

High and
Low Ger-
man.

In the German district proper during this period we find in operation, though only partially and unequally a *Lautverschiebung* or mutation of consonants. It took place most completely and earliest in the South (High German), less and less towards the North (Low German). The Low German dialects are the least changed, and most nearly represent the original German language.

Thus, disregarding dialectic differences—

t initial becomes in H. G. the fricative *z* (= *tz*); e. g. Low G. *teihn* = H. G. *zehn*. Medial and final *t* becomes a spirant which is written *z* but pronounced sharp *s* (Germ. *sz*). This change took place about 600 A. D.

k medial and final becomes in H. G. the spirant *ch*; e. g. Low G. *sprechen* = H. G. *sprechen*.

p medial or final becomes *f* in all H. G.; e. g. Low G. *schap*, H. G. *schaf*.

h and *f* remain unaltered.

th gradually passed to *d* in H. G.; e. g. *brother* became *bruder*.

d became H. G. *t*. In the intermediate districts *k* and *g*, *p* and *b* are not distinguished.

Middle High German embraces the period from 1100 A. D. to the 14th century; New High German the period since that time.

Exceptions
to Grimm's
law.

Having defined the term 'German' we may pass on to the exceptions to Grimm's law, which are threefold. We have first special combinations of consonants. Indo-European *sk*, *st*, *sp* are 'protected' by the hard spirant *s*, which remains unchanged; the following hard mutes do not, as by Grimm's law, become the corresponding aspirated mutes, but remain unaltered. Again, in the special case of the Indo-European combinations *kt*, *pt*, the *k* and *p* by Grimm's law become *h* and *f* respectively, but the following hard dental is unchanged (*K. Z.* xi. 161; Paul und Braune *Beiträge*, 5. 538).

Grass-
mann's
law.

Another class of exceptions fall under the head of Grassmann's law (*K. Z.* xii. 81): by which, in the apparently anomalous cases like Sk. *duhitar* (= Goth. *dauhtar*), Sk. *bandh* (= Goth. *bindan*), it is shown that the Indo-European stem began and ended with an aspirate, but that in the derived languages the double aspirate in the same syllable was not tolerated, and accordingly I.-E. *bhendh-* became Sk. *bandh-*, Gk. *πενθ-* (for *φενθ-* in *πενθερός*, *πείσμα*), Lat. *of-fend-ix*, and Goth. *bind-en*, quite regularly.

Verner's
law.

A third class of exceptions comes under the law enunciated by Verner (*K. Z.* xxiii. 98 sqq.), which explains those cases in which sonant mutes *g*, *d*, *b* in the German languages correspond, not to the aspirated, but to the hard mutes *k*, *t*, *p* in the Indian and Indo-European languages. We have, for instance, Germ. *tegu-* = I.-E. *dekem*, Germ. *modar* = I.-E. *mātar*, Goth. *bairand* = Sk. *bharanti*.

It may be well first to give a list of some of these exceptions, that it may be clear that they are neither few nor unimportant.

A. German *g* = I.-E. *k*.

	German.	Sanskrit.	Greek.	Latin.
	saga (saw)			seco.
	sagjan (say) }			
A.-S.	seegan }		ἐινεπε	insece.
	þegna-(thane) }			
A.-S.	þegn }		τέκνον.	

German.	Sanskrit.	Greek.	Latin.
Goth. <i>hals-aggan</i> (curve of neck)		<i>ἀγκών</i>	<i>ancus.</i>
A.-S. <i>angan</i> (arrow-head)			

B. Germ. *d* = I.-E. *t*.

A.-S. <i>þridja</i> }	<i>tr̥tiya</i>		<i>tertius.</i>
Goth. <i>fadi-</i> (in compounds like <i>brūþ-fadi</i> , bridegroom)	<i>patī</i>	<i>πόσις.</i>	
A.-S. <i>feóver</i> }			<i>quatuor.</i>
A.-S. <i>and-</i> (opposite)	<i>anti</i>	<i>ἀντί</i>	<i>ante.</i>
A.-S. <i>andswerian</i>			
A.-S. <i>andja</i> (end)	<i>anta, antya</i>		<i>antiae.</i>
A.-S. <i>ende</i>			

C. Germ. *b* = I.-E. *p*.

Germ. *seban*, A.-S. *seofon* (seven) = Sk. *saptan*, *ἑπτὰ*, *septem*.

But we have also cases of variation in consonantal change within the limits of the same root. Variation in the same root.

(i) I.-E. *k* = Germ. *h* and *g*.

Goth. *taihun* (A.-S. *týn*) = *δέκα*, *decem*; but from the same root comes a noun *tegu*, Goth. *tigu*, O.H.G. *-zig*, A.-S. *-tig*, Eng. *-ty* (in *twen-ty*).

So Germ. *hauha*, A.-S. *heáh* (high), N.H.G. *hoch*.

hauga (heap) (N.H.G. *hüg-el*).

Germ. *teuhan*, Goth. *tiuhan* = *duco* (N.H.G. *ziehen*).

tuga, O.H.G. A.-S. *heretoga*, N.H.G. *Herzog*.

Germ. *fanhan*, subst. *fanga* N.H.G. *fang*.

slahan } *slaga* *schlag*.

A.-S. *sleán* } A.-S. *slaga*.

German.		Sanskrit.	Greek.	Latin.
O.H.G. swehur	}	= Sk. <i>ṣvāçura</i>	<i>ἐκυρός</i>	socer.
A.-S. sveor				
O.H.G. swigar	}	= Sk. <i>ṣvaçrú</i>	<i>ἐκυρά</i>	socrus.
A.-S. sveger				

(ii) I.-E. *t* = Germ. *p* and *d*.

frapjan (understand) subst. *frôða* A.-S. *frôð*.

soþa (satisfying) *sada* cf. *satur*, *sat*, *satis*.

leiþan (go) A.-S. *lið* (limb) A.-S. *lædan*, *lād*.

(iii) *p* and *b* have coalesced in most German languages, and we therefore do not find the same variation in the case of the labials.

Variation-
in conjuga-
tion.

Particularly is the same variation noticeable in conjugation : the German surd fricatives and sonant mutes which answer to Indo-European surd mutes so divide themselves in conjugation that all present forms (infin., pres. indic., conj., imper., part.) and the singular of pret. indic. show surd fricatives, all other forms sonant mutes.

A. I.-E. *k* = Germ. *h* (*hv*), *g*.

In the following list Anglo-Saxon forms are given to illustrate old German.

N. H. G.	Pres. inf. A.S.	1 sing. pret.	1 plur. pret.	Past pt.
<i>schlagen</i>	<i>sleán</i> (strike)	<i>slôh</i>	<i>slôgon</i>	<i>slägen</i> .
	<i>leán</i> (abuse)	<i>lôh</i>	<i>lôgon</i> .	
	<i>hleghan</i> (laugh)	<i>hlôh</i>	<i>hlôgon</i> .	
<i>sehen</i>	<i>seón</i> (see)	<i>seah</i>	<i>sægon</i> .	
<i>befehlen</i>	} <i>feolan</i> (hide)	<i>fealh</i>	<i>fulgon</i> .	
(commend)				
<i>gedeihen</i>	} <i>þeon</i>	<i>þâh</i>	<i>þigon</i>	<i>þegen</i> .
(grow)				
<i>leihen</i> (lend)	<i>lihan</i>	<i>lâh</i>	[<i>ligon</i>].	
<i>ziehen</i> (drag)	<i>teón</i>	<i>teáh</i>	<i>tugon</i>	<i>togen</i> .
<i>fliehen</i> (fly)	<i>fleón</i>	<i>fleáh</i>	<i>flugon</i>	<i>flogen</i> .

B. I.-E. *t*, = Germ. *p*, *d*.

Engl. <i>quoth</i>	<i>cweðan</i>	<i>cwæð</i>	<i>cwæðon</i>	<i>cweden</i> .
<i>werden</i> (be- come)	} <i>veorðan</i>	<i>vearð</i>	<i>vurdon</i>	<i>vorden</i> .

N. H. G.	Pres. inf. A. S.	1 sing. pret.	1 plur. pret.	Past pt.
<i>schneiden</i> (cut)	snīðan	snâð	snidon	sniden.
<i>schreiten</i> (walk)	} scriðan	scrâð	scridon.	
<i>seiden</i> (seethe, cook)	} seóðan	seáð	sudon	soden.

It is clear that these variations, which run through the Old Northern, Old Saxon, Old Frisian, Anglo-Saxon, and Old High German languages cannot have originated independently in each. The sphere is too limited and definite, and the acoustic difference too small, for analogy to come in. So that where we find them in one language we are justified in assuming them, even though not actually found, for the other members of the group. It is true that the variation is unknown to Gothic, which has the surd fricatives throughout; but Gothic in other respects has a tendency to uniformity unknown to the other Germanic languages.

The difference then must go back to a period before the separate existence of the several German languages; and the explanation of the variation in conjugation must also be the explanation of that in individual word-forms, i. e.

tehan beside *tegu* is to be explained in the same way as *slahana* (inf.) beside *slagana* (past pt.).

bróðar beside *móðar* in the same way as *kveðana* beside *kvedana*.

Now the Indo-European system of verb inflexion depends upon :—

- (i) Difference of termination.
- (ii) Difference of root-vowel.
- (iii) Presence or absence of augment and reduplication.
- (iv) Difference of accent.

Now take the following groups of primitive German forms :—

kveðana	kvaþ	kvâdum	kvedana.
slahana	slôh	slôgum	slagana.
liðana	laiþ	lidum	lidana.

Here the terminations of *kveðana* and *kvedana* are the same, but the consonants different; therefore the variation in the consonants cannot depend on (i).

Slahana has a short, *slôh* a long vowel; but the consonant is the same; therefore the variations cannot depend on (ii).

They cannot depend on (iii), as this will not account for change in non-verbal forms; and we should have expected the same form throughout the preterite, which is not the case.

Therefore, by the method of exhaustion, it must depend on (iv).

Verner's
law.

But this can also be proved inductively—the law that results being this: *Where in Sanskrit the accent is on the root syllable, we have in German surd fricatives at the end of roots; where the accent falls on the termination, we have sonant mutes.*

We may illustrate the laws in the system of verbal inflexion as follows:—

A. Where the root is accented in Sanskrit; in German we have surd fricatives in the corresponding conjugation.

Sanskrit pres. indic.	=	German pres. indic.
<i>bhédāmi</i>		līpa.
<i>bhédasi</i>		līpis.
<i>bhédati</i> , etc.		līpīp.
„ „ pres. potential	=	„ „ pres. conj.
<i>bhédēyam</i> , etc.		līpau, etc.
„ „ pres. imp.	=	„ „ pres. imp.
<i>bhēda</i> , etc.		līp, etc.
„ „ pres. part. act.	=	„ „ pres. part. act.
<i>bhédant</i> —		līpand—
„ „ verb. subst.	=	„ „ infin.
<i>bhédana</i>		līpan.
„ „ perf. ind. sing.	=	„ „ pret. ind. sing.
<i>bibhēda</i>		laip.
<i>bibhéditha</i> , etc.		laist.

B. Where the termination is accented in Sanskrit, in German we have sonant mutes:—

Sanskrit perf. ind. plur.	=	German pret. ind. plur.
<i>bibhūdīmá</i>		lidum.

<i>bibhidá</i>	lidap.
<i>bibhidús</i>	lidun.
Sanskrit perf. potent. = German pret. conj.	
<i>bibhidýám</i> , etc.	lidjau, etc.
„ „ perf. part. pass.	
<i>bhinná</i> (= <i>bhidná</i>)	lidana.

The same principle underlies the relation of *s* and *z* (*r*) in the German languages. For an Indo-European *s* is represented sometimes by *s*, sometimes in Gothic by a *z*, which in other German languages is *r*. The conditions determining the appearance of the sonant *z* (*r*), instead of the surd *s*, are the same as those which determine the appearance of *g*, *d* instead of *h*, *p*. E.g. A.-S. *éare* answers to *auris* for **ausis*, but *náse* to *nasus*, *mús* to Sk. *mūṣ*.

Also in conjugation, we find A.-S. *ceósan*, *ceás*, *curon*, *coren*, where *s* and *r* alternate on the same principle as *h* and *g*, *p* and *d* above.

It must be noted that in the division of syllables all consonants go with the preceding vowel, e.g. *fad-ar*, *finp-an*. We may illustrate this division by comparing the English pronunciation of *mag-nan-im-it-y* with the French *ma-gna-ni-mi-té*.

Further illustration of the operation of Verner's law is reserved for a foot-note¹.

¹ (a) Individual cases are—

Sk. <i>mātár</i>	Germ. <i>mōdar</i> .
<i>pítár</i>	<i>fadar</i> .
<i>snupá</i> (cf. <i>rvós</i> , <i>nurus</i>)	A.-S. <i>snóru</i> .
<i>çatá</i> (<i>ç-karó-v</i>)	Germ. <i>hund</i> .
<i>catvāras</i>	<i>fedvōr</i> .
<i>saptán</i> (<i>çtrá</i>)	<i>seban</i> .

Further—

Sk. <i>ketú</i> (appearance)	Germ. <i>haidu</i>	A.-S. <i>hād</i> (-hood).
<i>ántara</i>	<i>anþara</i>	<i>óðer</i> (other).
<i>antár</i> inter	<i>undar</i>	under (under).
<i>āti</i> <i>vḥssa</i> , <i>an-a-ti</i>	<i>anadi</i>	ened.

(b) In Sanskrit causatives the accent fell on the suffix: the same was the case in the German causatives, e.g. :—

<i>hlōgjan</i> (to make to laugh)	from <i>hlahjan</i> .
<i>hangjan</i> (to hang, trans.)	from <i>hanhan</i> (intrans.)

It may be observed that the foregoing account depends on the hypothesis that the Sanskrit in the majority of cases represents the original Indo-European accent; but this hypo-

fra-wardjan (to destroy)	from fravairjan.
sandjan (to send)	from sinjan (to go).
nazjan (to save)	from nesan (Germ. genesen).
laizjan (to teach)	from lisan (to know), cf. <i>de-lirare</i> .

And generally we may say that there is no German causative with *h*, *þ*, *s* as final vowel of the root.

(c) Strong verbs in German correspond to the first and fourth Indian classes, which accent the root syllable. Accordingly the Indian termination *-t* corresponds to a German *d*, e. g. :—

German 3 <i>sing. pres. ind.</i>	berid	=	Sanskrit <i>bhāratī</i> .
2 <i>plur. pres. ind.</i>	berid	=	<i>bhāratha</i> .
2 <i>plur. pres. conj.</i>	beraid	=	<i>bhāreta</i> .
3 <i>plur. pres. ind.</i>	berand	=	<i>bhāranti</i> .

(d) The Sanskrit ending *-tā* of the participle corresponds to a German *-da*, e. g. :—

Sanskrit <i>damitā</i>	Gothic <i>tamida</i>	English <i>tamed</i> .
<i>sāditā</i> .	<i>satida</i>	<i>sated</i> .
<i>matā</i>	<i>munda</i> .	
<i>jātā</i>	<i>kunda</i>	German <i>kind</i> .
<i>grutā</i>	A.-S. <i>hlōd</i>	English <i>loud</i> .

Compare the participial forms *kaldā* (cold), root *gel-*, *aldā* (old, cf. *altus*), *dauda* (dead).

(e) Words formed with the suffix *ti* are sometimes oxytone, sometimes barytone in Sanskrit. We find a corresponding variation of the dental in German.

Thus :—

ga-qum-þi	Sanskrit <i>gā-ti</i> .	
ga-baur-þi	✓ <i>bher</i>	cf. <i>bir-th</i> .
But sā-di	✓ <i>se</i>	cf. <i>seed</i> .
ga-mun-di	Sanskrit <i>matī</i>	cf. <i>mind</i> .
spōdi	Sanskrit <i>sphāti</i>	cf. <i>speed</i> .
skor-di		cf. Greek <i>skap-sis</i> .

An extension of Verner's law has been made by Bugge (Paul und Braune, *Beiträge*, xii. 399), who maintains that, even at the beginning of a word, original *k*, *t*, *p* are sometimes represented by German *g*, *d*, *b*, instead of by the regular *h*, *þ*, *f*. Where the main accent originally rested on the first or second syllable we have in German *h*, *þ*, *f*, but where the main accent originally rested on the third syllable, or even later, we find in German *g*, *d*, *b*. In such words the first syllable was pronounced with weaker stress.

Anglo-Saxon *distæf* (distaff) is to be referred to original *dehsistabās* for *pehsistabās*, where *þhs-* answers to Latin *tex-ere*.

Gothic *gamains* = Latin *communis*, and both are to be referred to an original *kommoins*: in similar instances German *ga-* answers to Latin *com-*.

Gothic *gabri* (wealth) is not to be referred to *giban*, but answers to the

thesis is borne out by the facts given above and will receive further justification in the following pages.

Phonetically we may explain Verner's law by observing that the expiratory accent and the surd consonant alike require a strong stream of breath. Where therefore the expiratory accent existed, there was sufficient volume of breath to maintain the surd consonant, but where the expiratory accent was wanting, the surd consonant became the corresponding voiced consonant, which requires less emphatic utterance.

So far we have spoken almost exclusively of the accent ^{Syllabic accent.} which falls upon a particular syllable of the word, and which we may therefore call the 'Syllabic accent.' And it is no doubt in this sense that we most frequently use the term, when we speak e.g. of the accent of *ἀνὴρ*, *hómo*, *mankínd*. But besides this there is the 'sentence-accent' ^{Sentence accent.} which falls on some particular word in a sentence, so that this word is to the surrounding words what in the case of syllabic accent the accented syllable is to the surrounding syllables. Further, in both these cases we are using the word accent in an absolute sense; we are speaking as though there were but one accent in every word or sentence. But we may also use the word to express the relative stress laid on different syllables of the ^{Hauptton and Nebenton.} same word or on different words of the same sentence. In the words '*mànipuláris*,' '*còntemplátiòn*,' e.g. the main accent or '*hauptton*,' as the Germans call it, is on the penultimate syllables; but the first syllable in both cases has an accent which is relatively strong as compared with that on the next, though relatively weak in comparison with that on the penult. This latter may be called the secondary accent, or in German the '*nebenton*.' Both these accents, the *hauptton* and the *nebenton*, must be taken account of in any general theory of the subject.

Latin *copia*, i. e. *ga-abí* = *co-opi-a*. Regularly Latin *co(m)-* should be represented by German *ha(m)-*, as in Gothic *hansa* (crowd), whence are named the *Hanse-towns*.

Anglo-Saxon *gēac* (mod. English *gawk*) is related to *κόκυγς*, and points back to an original German *konkugós*.

It may be noticed that the *hauption* or main accent is an important part of the word or sentence in which it occurs. According as the syllabic accent rests on one or another syllable, the meaning of the word is changed. In English 'convert' means one thing, 'convért,' another, and the same principle runs through all Indo-European languages (cf. *τρόχος*, *τροχός*, Sanskrit *bhāras*, *bharás*). The position of the syllabic accent also determines whether the word is intelligible or not; *assist*, e. g. is meaningless, *assist* intelligible, and we cannot doubt that the same would have been true in Greek, e. g. of *ἄνδρος* instead of *ἀνδρός*¹. But precisely the same is the case with the sentence-accent. 'Give me that book' has a totally different meaning according to the place of the sentence-accent, while 'it is raining' with the accent on the first word is unintelligible².

Sentence
accent in
Greek.

The part played by sentence-accent in Greek is highly important. The most common case is the alteration of the acute accent on an oxytone word to a grave in the middle of a sentence. What the exact meaning of this alteration may be it is not easy to say, but it clearly has to do, not with the word in itself, but with its position as member of a group. Another case is the difference of accentuation in enclitics and interrogatives (e. g. *τίς* but *τις*), the word in both cases being precisely the same, but the function of the word in the sentence differing. But above all we may notice the influence of sentence-accent in the three groups of phenomena known as Enclisis, Proclisis, and Anastrophe.

Enclisis.

Of Enclisis we shall have more to say later on, at present it is sufficient to note the difference of *Ζεὺς ἡμῖν* and *Ζεὺς ἡμιν*, *Ζεὺς ἐστι* and *Ζεὺς ἔστι*, where it is clear that the

¹ For a possible instance in Greek of the difference in accent causing a difference in meaning, we may compare the story of the line in Eur. *Or.* 279 *ἐκ κυμάτων γὰρ αὐθις αὐτὸ γαλήν' ὀρῶ*, where the actor Hegelochus pronounced *γαλήν*. (*Ar. Ran.* 304.)

² With regard to the syllabic-accent it is to be remarked that it is capable of varying its position even within the limits of a single syllable—that it comes, e. g. much nearer to a following media than to a following tenuis; contrast *seat* and *seed*, *meat* and *meed*, *leak* and *league*.

varying accentuation is due not to anything in the words themselves but solely to the part they play in the sentence. So again with Proclisis¹, *θεὸς ὤς* and *ὤς θεός* differ purely in the position of the words employed. The Anastrophe of prepositions is a disputed point, and this again will be discussed later on. Here it will be sufficient to point out the influence of sentence-accent in *περὶ σοφίας* beside *σοφίας πέρι*. Proclisis.
Anastrophe.

Enough has been said to show that in any investigation of the question of accent we must take account not merely of syllabic but also of sentence-accent. We can now go on to consider in detail the phenomena of accent as they are presented to us in the Greek language. It is clear that to arrive at any scientific result, we must be guided in this department by the same principles as elsewhere. We must go upon the supposition that the system we find in Greek or any other Indo-European language is developed from the system that prevailed in the original language, a supposition which is proved by Verner's law; that the development is in accordance with strict phonetic law, and that any apparent irregularity must be explained, at least for the present, by the action of analogy.

Now the system of accentuation presented to us by Greek is dominated by the law of three syllables. By this law the acute accent or *haupton* may not recede farther from the end of a word than the antepenultimate, or, in cases where the last syllable is long, than the penultimate syllable. In technical language, the recessive accent is limited to three syllables or three *morae*, a *mora* being the quantity of a short vowel, and a long vowel being equivalent to two *morae*. To this law, which is otherwise universal, there are two cases of apparent exception. The law of three syllables.

(1) In the case of words with a trochaic ending the acute

¹ It may be noticed that proclisis is unknown to the ancient grammarians, who always accented what we now call proclitics. The name was adopted by Hermann to describe the practice of the MSS., but in defiance of the rules of the grammarians. From him it has passed into modern grammars.

accent may fall on the fourth *mora* from the end, e.g. ἄζωστος, ἥπειρος. Of this exception no explanation can be given, but there may be noticed a certain fluctuation in this class of words, the earlier accent, according to the grammarians, conforming to the law of three syllables:—

We find, e.g.:—

τροπαῖον (Old Attic)	beside	τρόπαιον (New Attic).
ἄχρεῖος (Homeric)		ἄχρειος (Attic).
γέλοῖος		γέλοιος (New Attic).
ἄγροῖκος		ἄγροικος (Attic).
ὁμοῖος (Homeric)		ὁμοιος (Attic).
ἐρῆμος		ἐρημος.
ἐτοιῖμος		ἐτοιμος.

Similar cases are:—

μοχθηρός	μόχθηρος.
πονηρός	πόνηρος.
ἀγυιά	ἄγυια.
ὄργυιά	ὄργυια.

In some of these cases the testimony of grammarians is contradictory, in some the difference of accent is connected with a difference of meaning, e.g. ἄγροικος is variously accented according as it means ὁ ἐν τῷ ἀγρῷ οἰκῶν or ὁ ἀμαθής, though again authorities differ as to which accent is appropriate to each meaning. But enough has been said to show a fluctuation in this class of words with a trochaic ending, though such a fluctuation is not confined to words of this rhythm.

(2) In words like κήπου the violation of the law of three *morae* is only apparent, as in this case the accent falls on the second *mora* of the first syllable (κεέπου).

The accent
in Sanskrit.

The law of three syllables, or more strictly of three *morae*, is then virtually universal in the Greek language. Let us now turn to Sanskrit. The system of accentuation that prevails in Sanskrit may be proved to represent very closely the system of the original language, chiefly by the fact that the so-called exceptions to Grimm's law which are connected by Verner's law with the phenomena of accent give indications

of the existence of an accentuation-system in the Germanic languages differing very much from that now dominant, but corresponding closely to the Sanskrit system. Now in Sanskrit the accent is not confined within the narrow limits which restrict it in Greek and indeed in Latin. The accent in Sanskrit is 'free,' that is, it may fall upon any syllable in a word; and its actual position is determined not by the quantity of the final syllable (as in Greek), nor by that of the penultimate syllable (as in Latin), but solely by the inflexion of the word and its function in the sentence. No more striking instance of the difference of the two systems can be given than by the case of the finite verb, which in Sanskrit is unaccented, except when it appears in dependent clauses or at the beginning of a sentence.

Supposing the systems of Sanskrit and Greek to be both derived from some one primitive Indo-European system, the question naturally arises how we are to reconcile facts apparently so conflicting. To this question an answer that is at any rate partially satisfactory has been given by Wackernagel (*K. Z.* xxiv. 457 sqq.). His view, as amplified and extended by Bloomfield in the *American Journal of Philology* (iv. 21 sqq.) and by Wheeler (*Der griechische Nominalaccent*, Strassburg, 1885) will be given in the following pages.

It is clear that there are in Greek a certain number of words which exhibit the 'free,' or as we may call it the 'historic' accent, an accent resting on different syllables of the words according to laws which now escape our observation. The accent of *πέντε, ὀκτώ, πούς, ποδός* is clearly identical with that of Sanskrit *pāñca, aṣṭá, pád, padás*, and whatever is the explanation of the one must also be the explanation of the other. But the accent of *ἐβούλεον, ἐβουλεύετε* exhibits a new principle which has nothing analogous in Sanskrit and must be explained by the intervention of a new law, that of the three *morae*. The discovery of Wackernagel was the connexion of the accentuation of such words with the accentuation in cases of enclisis. The accent limited by the law of three syllables may be called the recessive accent.

Certain words in Greek under certain circumstances take no accent of their own, but 'throw the accent back,' as the expression is, upon the preceding word. But the accent in enclisis is limited in Greek, as in the case of single words, to three syllables and three *morae*: that is to say, the enclitic word is considered as an integral part of the preceding word (as indeed it is written in Latin in the case of *-ne*, *-que*, *-ve*) and the whole word-group is then accented in accordance with the law of three syllables. Thus the accent of *Ζεὺς μοι* is identical with that of *κήπον*, that of *καλὸς ἐστι*, οὐ φησι with that of *ἄζωστος*. But in a case like *Ζεὺς ἡμῶν* complete enclisis is impossible, as *ἡμῶν* contains four *morae*. As a substitute therefore for complete enclisis the accent goes as far back as the law of three *morae* will permit. The importance of this principle will appear presently¹.

Quasi-
Enclisis.

We have seen that the finite verb in principal clauses in Sanskrit is unaccented and enclitic; the verb in Greek may be described as *quasi-enclitic*. Owing to the law of the three syllables it is not able in the vast majority of cases to incline its accent entirely on the preceding word; as a substitute therefore for complete enclisis it draws back the accent as far as the law of three syllables permits.

¹ It may be convenient to give the laws of enclisis as usually understood. They are stated by Chandler (*Greek Accentuation*, § 964 sq.) as follows:—

(i) An oxytone word followed by an enclitic remains oxytone, the enclitic losing its accent, *ἀγαθὸς τις*.

(ii) After a paroxytone word a monosyllabic enclitic loses its accent, *φίλος τις*.

But (a) a paroxytone word with a trochaic ending, when followed by an enclitic, takes an acute on the last syllable, *ἀνδρά μοι*.

(b) a paroxytone word of any form followed by an enclitic beginning with *σφ* takes an acute on the last syllable, *πολλάκις σφεας*.

The last two rules are tacitly ignored by modern editors.

(iii) A dissyllabic enclitic after a paroxytone word, other than the cases given above, is oxytone, *πολλάκις ἐστίν*.

(iv) A proparoxytone followed by an enclitic takes an acute on the last syllable, *ἀγγελός τις*.

(v) A properispomenon followed by an enclitic takes an acute on the last syllable, *σῶμά τι*. But dissyllabic enclitics after properispomena ending in *ξ* or *ψ* are oxytone, *κῆρυξ ἐστίν*.

(vi) After a perispomenon enclitics lose their accent, *Ἐρμῆς ποῦ*.

In general we may say that the historic accent, as presented to us in Sanskrit, is preserved in Greek wherever its appearance is not prevented by the intervention of one of the special laws given below. The following are typical instances:—*πάτ, παῖς* : *πούς, ποδός*—*ρίαν, ῥίαν* : *λίπών, ἔλιπον*—*γράβας, γρύβας* : *κλέος, κλυτός*—*νιδνάν, νιδνᾶν* : *εἰδώς, ἰδύα*. The chief exception is the finite verb. In the finite verb, and in all words where the historic accent would stand before the antepenultimate syllable, a new law comes in by which the accent may not recede beyond the last three *morae*, or in the case of words with a trochaic ending the last four *morae*. But just as *Ζεὺς ἡμῖν* is the enclitic form of *Ζεὺς ἡμῖν*, where complete enclisis is impossible, so *Ζεὺς δοίη* is the enclitic form of *Ζεὺς δοιή* (Sanskrit *deyāt*)¹. Only the distinction between the enclitic verb in principal and the non-enclitic (orthotone) verb in dependent clauses, which is observed in Sanskrit, is lost in Greek, and here the verb is uniformly enclitic, or rather quasi-enclitic.

The only hindrance to the verb in Greek, as in Sanskrit, being entirely enclitic is, as has been already said, the fact that the great majority of verb-forms contain more than three *morae*. A strong confirmation of the theory here given is the fact that the only purely enclitic verb-forms in Greek, the present indicative of *εἰμί* and *φημί*, are the only forms that nowhere exceed two syllables and three *morae*. *λέγω* might have been accented like *τινῶν*, *λέγε* like *τινί*, but this was not possible with *λέγομεν*, *λέγετε*, *λέγουσι*. Here, therefore, we have the action of analogy: the forms not capable of enclisis have necessarily taken the recessive accent as a substitute for enclisis, and have assimilated to themselves the remaining forms of their system. *φημί*, *εἰμί*, on the other hand, admit of complete enclisis throughout.

With regard to the two apparent exceptions, *εἶ* and *φής*, which are orthotone, it may be noticed that *εἶ* is a late form and apparently only Attic; therefore its accent may be due to

¹ Cf. *ἔπολε* for an earlier **ἔπολε*, the augment always taking the accent in Sanskrit, but complete enclisis being impossible in Greek for the most part.

special considerations. The older forms, *εἰς*, *ἐσσί* are enclitic. With respect to *φῆς*, Wackernagel has shown that it is practically only found in relative and interrogative clauses. In the first case its accent would be consistent with the practice of Sanskrit and a solitary remnant of the primitive accent in dependent clauses; of the second it may be remarked that the accentuation of interrogative sentences, and therefore of the verb in them, is naturally more emphatic than that of ordinary discourse. The accent of *φῆς* in this latter case may be compared with the Sanskrit accent of the verb at the beginning of a sentence, where it is necessarily emphatic, and with the accent of the pronouns in Greek under similar circumstances, e. g. *οὗτος σὲ φωνῶ* (Soph. *Aj.* 1047).

Benfey's
theory.

We cannot, however, overlook the fact that *φαμέν*, *πατέ*, *φασί*—*ἐσμέν*, *ἐστέ*, *εἰσί* represent the historically correct accent of the plural (cf. p. 390) as *ἔστι* does that of the singular. There is some authority for accenting *φῆμι* properispomenon (Chandler, § 937), which would also be agreeable to the theory of primitive inflexion; and on the whole perhaps the theory of Benfey (*Vedica und Linguistica*, p. 19) is less far-fetched: that in the majority of cases *φῆμι* and *εἰμι* became completely enclitic, owing not merely to the number of syllables they contained, but also to their function in the sentence. *εἰμι* as a mere copula is naturally enclitic, for *φῆμι* we may compare the colloquial enclitics 'says I,' 'says he,' in English. Where, however, the verbs are emphatic, they keep the original accent, at any rate in the case of *ἔστι*, and in *φῆμι* if we accept the accentuation of Tyrannion. Where they are accented on the last syllable they are rather to be classed as *proclitics*, and their accent is to be compared to that of prepositions, when coming before their case (v. p. 278).

It is to be noticed that in this last case they have a grave and not an acute accent, and according to the theory of the grammarians a grave accent only indicates that this syllable on which it rests has not the acute accent, i. e. is not, strictly speaking, accented at all.

The fact that *εἰμι* (*sum*) is never accented on the first syllable may be due to a wish to distinguish it from *εἶμι* (*ibo*).

It must be remarked that participles and infinitives, not being finite verb-forms, were never enclitic and therefore keep the historic accent in Greek, cf. *βῆραν φέρων*, *ρίαν λιπών*, *ρυάν ὀρνύς*, *βαβῦνάν πεφυώς*. So with compounds, the finite verb-forms were enclitic, and threw the accent back, e.g. *σάμβηρα σύμφερε*, *ἀπὶ ἀστί ἔπεςτι*: the non-enclitic forms kept the historic accent, e.g. *ὑπολαβών*, *καθῆσθαι* but *κάθηται*.

It has been suggested, as an explanation of the recessive accent, that at some time in the separate existence of the Greek language a new accent arose side by side with the historic which rested uniformly on the last *mora* but two. According to this theory there would have been a time when e.g. *Ἀγάμεμνον* bore two accents, one the historic, which in all vocatives in Sanskrit, and therefore in the original language, rests on the first syllable, the other the recessive accent resting on the third *mora* from the end. Wackernagel supposes the recessive accent to have originated in the verb, and thence to have been extended to the noun, but for this there is hardly sufficient evidence. In any case these two accents would have come in conflict with one another. It remains for us to see according to what laws one or the other prevailed.

I. In the case of monosyllables and of disyllables with a short final, the recessive accent cannot come in, and the historic accent is therefore kept:—

e.g. *πάτ*, *παῖς*, *παῖ*, *παῖλα*, *παῖλας*, *παῖλαμ*, *παῖσι*.

πούς, *ποδός*, *ποδί*, *πόδα*, *πόδες*, *ποδῶν*, *ποσί*.

In cases like this a secondary accent could never have appeared, because the forms (except in the gen. dual and plur.), never exceed two *morae*; and at no period in Greek was the accent allowed to rest on two successive *morae*. At no time therefore could there have been a conflicting accentuation such as e.g. *πόδί*, and the historic accent was therefore maintained.

It is noticeable that precisely those forms of this type which exceed two *morae*, i. e. gen. dual and plur., are the forms

Participles
and Infinitives.

Conflict of
the historic
and recessive
accent.

whose accentuation deviates from the normal type. We have e. g. *παίδων, πάντων* but *ποδῶν*, i. e. in these two cases the recessive accent has predominated over the historic¹.

Aeolic
bary-
tonesis.

In the case of disyllabic words the nominative may not be capable of receiving the recessive accent, but the oblique cases may. *σοφός* e. g. contains only two *morae*, *σοφοῦ* contains three. Here therefore the recessive accent arising in the oblique cases might be extended to the nominative, and *σόφου*, with the recessive accent predominating over the historic, might give occasion to *σόφος*. This is what has happened universally in the Aeolic dialect. The 'Aeolic barytonesis' is nothing but the predominance of the recessive accent over the historic, e. g. from the conflicting accentuation *πόταμός*, Attic preferred *ποταμός* but Aeolic *πόταμος*.

The difference of accent in disyllabic nominatives corresponding to a difference in meaning, e. g. *φόρος, βήρας* beside *φορός, βηράς* is primitive, but will be discussed later on.

II. When the recessive accent falls later in the word than the historic accent, the recessive accent prevails by the law of the three *morae*.

Thus Sanskrit <i>jānamāna</i>	<i>γενόμενος.</i>
<i>jānitrī, jānitrīyās</i>	<i>γενέτειρα, γενετέρας.</i>
<i>dāmpati</i>	<i>δεσπότης.</i>
<i>pīvasant</i>	<i>πιήεις.</i>

So *ἄφθιτος* but *ἄφθίτου* Sanskrit *ākṣitasya*.

πότνια but *ποτνίας* *πάτνιγās.*

πάτριος but *πατρίου* *pītriyasya.*

ἡδίων but *ἡδίου* *svādīyān.*

πεντεκαίδεκα for *πέντεκαιδεκα* *pāñcadaśa* (cf. *ἐνδεκα*).

Specially to be noticed under this head is the question of the accentuation of compounds.

The accen-
tuation of
compounds.

For our purposes it will be convenient to classify compounds under three heads:—

(i) Determinatives, in which the first element of the compound is syntactically dependent on the last, e. g. *λιθοβόλος* = *ὁ λίθους*

¹ But in the case of *παίδων* it may be noticed that the stem is properly disyllabic and remains so in Homer. Cf. *Τρώων* from stem *Τρωῶ-*, *Τρωῆ-*.

βάλλον. This class is called by the Indian grammarians *tatpuruṣa*.

(ii) Descriptives, in which the first element is an adjective or adverb describing the second, e. g. βαθυδίνης. These compounds are called *karmadhāraya*.

(iii) Possessives, compounds which in form are substantives but in meaning are adjectives, denoting possession, etc. of the quality given by the substantive, e. g. ἐννεάπηχυς = nine cubits long. These are called *bahuvrīhi*.

Now in Sanskrit those determinative and descriptive compounds whose second element is a verbal adjective in *-tá* take the accent on the first element, e. g. *hástakṛta* (*kṛtá-*), *ghóṣa-buddha* (*buddhá* for *budh-tá-*). This was originally also the accent in Greek, as is proved by e. g. *ἐκδοτος*, *ἄλντος*, etc., but in cases like *ἀποτελεύτητος* (for *ἄποτελευτητος*) the recessive accent lies nearer to the end of the word, and therefore predominates.

Similarly in the case of abstract nouns in *-ti* with an adverbial prefix, the accent originally lay on the prefix (cf. Sanskrit *sáṁgati-*). This accent is kept where possible in Greek, and so we have *ἀνάπνευσις*, *ἐκβασις*, *ἀνάβλησις*, etc., but where the original accent cannot be preserved the secondary accent comes in, as in *ἀφαίρεσις*, *ἐκπέτασις*, *ὑπηρετήσις*.

Possessive compounds in the same way originally accented the first element; and this accent is kept under the same limitations. Thus we have :—

the historic accent in

βαθύκολπος (βαθύς)

κλυτόπωλος (κλυτός)

χαλκόπους (χαλκός)

ὑπέρθυμος (ὑπέρ)

χρυσόθρονος (χρυσός)

the recessive accent in

μεγάθυμος (μέγας).

ταυρομέτωπος (ταῖρος).

ἐννεάπηχυς (ἐννέα).

λινοθώρηξ (λίνον).

χρυσοπέδιλος (χρυσός).

There was an original distinction of accent between the two *‘Mutata and ‘Immutata.’* great groups of compounds known as *Immutata*, or those in which the meaning of the compound is the same as that of the elements which compose it (e. g. *ἡμιτάλαντον* = half a talent), and *Mutata*, or those in which there is a change of

meaning (e. g. *ἰσοδαίμων* = 'equal to a god,' not 'an equal god'). The former group comprises the descriptive and determinative compounds, the latter the possessives. *Immutata* originally accented the last element, *Mutata* the first. But after the introduction of the recessive accent, this distinction was only observed in Greek in those cases where the last element was disyllabic. We have for instance :—

Immutata. λιθοβόλος, throwing stones. *Mutata*. λιθόβολος, stoned.

θυμοβόρος, devouring
the heart

παιδογόνος, begetting
children

μητροκτόνος, matri-
cidal

{ θηρόβορος, de-
voured by wild
beasts.

θεόγονος, of divine
birth.

μητρόκτονος, slain
by a mother.

But in other instances other influences come in. Compounds where the last element is proparoxytone or paroxytone with a long final, can, whether *Mutata* or *Immutata*, accent only the last element. Thus we have :—

Mutata. ἰσοδαίμων

καλλιρέεθρος

λιπαροκρήδεμνος

Immutata. ἡμιτάλαντον.

ψευδάγγελος.

αὐτοκασίγνητος.

Again, the accent of *Mutata* and *Immutata* may, in the oblique cases, become identical, e. g. *μητροκτόνου* is genitive alike of *μητροκτόνος* and of *μητρόκτονος*. From these two facts arose a tendency to accent all compounds alike recessively, regardless of their origin, especially where the recessive accent would fall on the first element.

The rule is that *Immutata* are accented where possible on the first element, but where this is impossible the original accent of the second element is kept, thus—

ἐπίτονος but ἐπημοιβός,

ἀπότροπος but ἐπαρωγός,

ἡμίονος but τυμβοχοή, etc.

See further on this point below, where the difference of accent is connected with the rhythm of the word.

To return to the general rule :—

Compounds with α-privative accent the prefix in Sanskrit ;

this accent is kept where possible in Greek (e.g. ἄγνωτος), otherwise we find the secondary accent (e.g. ἀμάχητος).

Again, the vocative in Sanskrit, where accented at all, takes the accent on the first syllable, and some traces of this accentuation may be seen in Greek. Thus we have:—

μόχθηρε : μοχθηρός γύναι : γυνή.

Σώκρατες : Σωκράτης πάτερ : πατήρ.

Notice especially the vocative Ζεῦ (i. e. Ζεῦ) from a noun Ζεύς, where the accent shifts in the vocative from the second to the first *mora* of the diphthong. But in general the analogy of the nominative has predominated in Greek, especially where the accent cannot go back to the first syllable of the word: e. g. γεωμέτρα, Κλεόφρου like γεωμέτρης, Κλεόφρων.

In compounds the practical rule for accentuation is that the accent does not go further back than the last syllable of the first element. But this rule would seem to be merely the result of analogy; in most cases the recessive accent naturally fell in this place, and the regular accentuation of e. g. βαθύκολος, ὁμότιμος became the model for ὑπόδρα, τετράπος, etc. But some cases are to be otherwise explained, e. g. ἐπίπᾶν is a parathetic compound, in ἐπίσχος -σχος is entirely enclitic.

III. Where the place of the historic and recessive accent coincides, the accent remains in that place. This, of course, is self-evident. Instances are:—

θύγατερ	πότνια	νέποδες	πίερα	δώδεκα.
Sanskrit <i>dūhitar</i>	<i>pātṇī</i>	<i>nāpālas</i>	<i>pīvarī</i>	<i>dvādaśa.</i>

IV. Words with a dactylic ending which were originally oxytone become in Greek paroxytone.

This is a most wide-stretching and important rule. We will consider a few of the cases individually.

(a) Adjectives in -ρος, -λος are ordinarily oxytone, e. g. καθαρός, χαμαλός, παχυλός, Sanskrit *çithirā*, *bahulā*.

But those in -λος if they are dactylic in form are paroxytone, e. g. ἀγκύλος, ποικίλος, αἰμύλος, Τρωίλος. There are some exceptions, as ἄησλος.

(b) The perfect participle in -μένος. Sanskrit has only one

The perfect participle passive. perf. part. in *-mānā*, the more usual termination is *-ānā*; but whatever the termination, the accent is always oxytone, and that this accent is primitive may be seen by a comparison of the Germanic languages, where we get *worden*, Indo-European *ῥητονό*, the *t* by Verner's law becoming *d* in an unaccented syllable. The accent therefore of the part. in *-μενος* in Greek was most probably originally oxytone, and traces of this original accentuation are seen in the Greek proper names in *-μενός* (*Ὀρχομενός*, *Σωζομενός*, *Στησαμενός*, *Φαμενός*, *Τισαμενός*), and in the forms *δεξαμενή*, *είαμενή*. The normal accent however of the perf. part., as is well known, is paroxytone. This seems to be due to the fact that the bulk of these forms have a dactylic ending, and are of the type *λελειμμένος* (for **λελειμμένος*); and the majority has influenced the accent of the minority of the type *λελύμενός*.

The same principle accounts for the accent of *Immutata* compounds whose second element is a verbal adjective in *ο* or *ε*. We have already seen that the accent on the second element is primitive, but we should have rather expected it to be oxytone than paroxytone, inasmuch as the uncompounded adjective is oxytone (*πατροκτόνος*, e. g. is from *κτόνος*). But the fact that the majority of such compounds are dactylic has caused the accent to pass from the last to the penultimate syllable in *βοηδρόμος*, *πατροκτόνος*, etc., and the example of these has affected forms like *λιθοβόλος*. But forms with a non-dactylic ending (cf. p. 274) as a rule remain oxytone, e. g. *ὄλβιοεργός* (ο — υ). Precisely the same is the case with substantival compounds of the descriptive and determinative class. In *θυοσκοπός*, e. g. the element *σκοπός* is oxytone when uncompounded; in composition the word becomes paroxytone by virtue of its dactylic ending. The predominance of words with this rhythm has then affected the accentuation of this class of compounds as a whole, and so we have *δημοβίρος*, *αἰσχρολόγος*, *ἀρτοκόπος*, *δειπνολόχος*, etc. on the analogy of *λογογράφος*, *τελεσφόρος*, *ἐκηβόλος*, etc. In connexion with this fact we may note the tendency to avoid an aggregation of short syllables in compounds, even where there is no etymological justification

for the long syllable, e.g. ποδήμεμος, ὑπηρετής, μονῶνξ, ὑπόροφος, etc. No doubt σακεσ-φόρος is older than σακοφόρος, τευχεσφόρος than τευχοφόρος, while θυηφάγος (by the side of θυοδόκος), ἐλαφηβύλος (by the side of ἐλαφοκτόνος) may very well be compounded with feminine forms. So in ὅδοι-πόρος the first element may be a locative, cf. χαμαι-πετής. But it is of course natural that a language whose oldest literature is in a dactylic metre should show a proclivity to dactylic forms.

On the other hand, the possessive compounds, as we have already seen, were originally accented on the first element, and so naturally took the recessive accent in Greek (πατρόκτονος).

Again, it seems possible that the properispomenon in many words with a diphthong in the penult may be traced to the paroxytone accent in dactylic words, thus:—

φαῦλος = *φανσύλος = *φανσυλός (cf. δαυλός = *δασυλός (δασύς)).

κοῖλος = *κωίλος = *κωιλός (cf. κῶς).

δαῖρος = *dāfēros.

ὁμοῖος = *ὄμωλος (ὄμως).

φοῖβος = *φωίβος (φῶς, cf. στραβός, στιλβός, ἀμορβός for original accent of termination -βος).

γελοῖος = *γελῶιος (*γέλως).

Further, we may notice the accentuation of the following groups of words:—

Adverbs in -ίκα, αὐτίκα, τηνίκα, etc., as contrasted with oxytone adjectives in -κός (λογικός).

Adverbs in -κισ, πολλάκις, ἑξάκις, etc.

Pronominals in -λίκος, ἡλίκος, πηλίκος, etc.

Nouns in -λος, νυμφίος, πλησίος, ἀντίος, μυρίος, etc.

Diminutives in -ίον, χωρίον, χρυσίον, παιδίον.

Miscellaneous words of dactylic rhythm, e.g. καρκίνος, παρθένος, ἡρέμα, ἀτρέμα, ὀστέον, etc.

It may be noticed however that in Homer dactylic proper names are proparoxytone, e.g. Ἴφιτος, Φήμιος, Καλήσιος, while it is those of a tribrachic rhythm that are paroxytone, Τυχίος, Ὀδῖος, etc. (v. Monro, *H. G.*, § 129).

A further striking example of the dactylic law is seen in the system of noun inflexion. We have already shown that the 'weak cases' were originally accented on the last syllable, and this accent is maintained in the case of disyllabic forms; where however the forms are trisyllabic the accent becomes paroxytone, and we get *ὄφρυνος*, *ἀστέρος*, *πατράσι* (for older **ἀστερός*, **ὄφρυνός*, **πατρασί*), the accent being shifted owing to the rhythm of the word (contrast the accentuation of *ποδός*, *τρισί*). It would, however, be too much to deny in these cases the influence of the nominative and the tendency to keep the accent in oblique cases on the same syllable, a principle which we have already seen operative in the vocative.

Anastro-
phe in pre-
positions.

Anastrophe in prepositions may most suitably be discussed under this head. We have seen above that the varying accent in e.g. *σοφίας περί* and *περί σοφίας* is due, not to any difference in the word itself, but solely to its position in the sentence, that it is a case, that is, of sentence-accent and not of word-accent. The problem is whether the proper accent is that which appears in anastrophe or not.

On the whole, perhaps the strongest evidence on the subject is the fact that the Sanskrit *ápa*, *ámi*, *úra* are paroxytone, and therefore correspond to the Greek *ἄπο*, *ἐπι*, *ὑπο*. The arguments adduced for supposing the original accent to have been oxytone, or in support of the hypothesis that prepositions were originally unaccented, are hardly strong enough to counterbalance this fact. It is argued that anastrophe only occurs, according to the best grammarians, when the preposition comes immediately after its case, whereas we should have expected the original accent to be preserved where the preposition was most independent. But the fact that the grammarians differ shows that little weight is to be attached to this argument. Again, the difference of accentuation in elision before a pause, as *τούτων πέρ'* compared with that in *τούτων παρ' ἦλθεν* does not come to much, as the latter would naturally be assimilated to *παρῆλθεν* as a single word. From the idea that monosyllabic prepositions do not suffer anastrophe, it has been supposed that all prepositions are

properly toneless; but the best authorities are in favour of writing *κακῶν* ἔξ (Chandler, § 913). The case of prepositions of more than two *morae* is discussed below.

κατά, *μετά* are not found in Sanskrit, but the accent of the latter seems vouched for by Gothic *miþ* (i. e. *μέτα*).

ἀμφί is Sanskrit *abhi* and keeps the primitive accent. The same may be said of *ὑπέρ*, i. e. **ὑπέρ*, Sanskrit *upāri*; *ὑπερ* may owe its accent in anastrophe to the analogy of *ὑπερος*, Sanskrit *úpara*.

ἀντί is Sanskrit *ánti*, but the German *and* vouches for an Indo-European *antí*.

διαί, *ὑπαί*, *παπαί* were obsolete in the days of the grammarians, and we can attach no great value to their evidence on these words. The *-ι* is mysterious, but we may perhaps compare *ούτοσί*, *ὀδί*, in which case the accent would seem to be primitive.

ἀνά, *διά* are said never to retract the accent, the reason alleged by the grammarians being a wish to avoid confusion with *ἀνα* (from *ἀναξ*) and *Δία*. But Hermann (*ad Eur. Med.* 1143) holds this to be a fiction of the grammarians as far as regards *ἀνά*, while in *διά*, if it is an instrumental, the accent would be primitive. A further argument for prepositions being originally paroxytone is seen in their accentuation when used adverbially, e. g. *πέρυ* when = *περίσσως*, *ἀνα* = *ἀνάσσηθι*, *πάρα* = *πάρεστι*, etc. (Chandler, § 917).

All this points to prepositions being in themselves for the most part paroxytone, but when they occur before their cases, *proclitics*: so that *περὶ σοφίας* is parallel to *ποῦ ἔστιν ὁ ἀνὴρ*; *σοφίας πέρυ* to *ἔστι θεός*: the preposition in the latter case being added as it were as an after-thought, to explain more fully the meaning of the case. (Compare the accent on prepositions in Latin, p. 285.)

Monosyllabic prepositions, when proclitic and occurring before their case, have no accent; and *ἐκ κακῶν* is parallel to *ὁ ἀνὴρ* (though *νεῦτ. τό* and the oblique cases and Sk. *सु* throughout are orthotone), but *κακῶν ἔξ* to *θεὸς ὧς* beside *ὧς θεός*¹.

¹ It may be noticed that even the grave accent on prepositions disappears

In the same way the grave accent on the final syllable of *τινός, τινὶ, τινές, τινὰ, etc.*—*ποθὲν, ποθὶ, ποτὲ—ποιός, ποσός, ἀμός, ὅτῃ, ποτὲ—ἐμός, τεός, σφεός, ἀμμός, ὑμμός* is to be looked upon as a case of proclisis. The non-enclitic form is seen in *τίνος, πόθεν* (cf. *ἄλλοθεν*, Sanskrit *álha*), *πόθι* (cf. *αὐθι*, Sanskrit *álhi*), *τότε, ὅτε, etc.* Some of these forms may be completely enclitic, but complete enclisis is impossible in the oblique cases of *ἀμμός, ὑμμός*, and *ἐμός* may have followed their analogy or that of *ἐμοῦ*. But where the enclitic word contains more than two syllables, the recessive accent comes in, and *ἡμέτερος, ὑμέτερος, σφέτερος* are accented like *φεροίμεθα*.

V. Finally we have to consider the case where the historic accent lies nearer the end of the word than the secondary accent. In this case, however, no law has as yet been obtained; sometimes one, sometimes the other accent predominates, according to principles which are so far obscure.

An instance or two will suffice.

The historic accent appears, e. g. in—

ἐκατόν	ἐννέα	γενετήρ	ἰθαρός	παχυλός	ἐπαρός.
Sk. <i>çatām</i>	<i>nāna</i>	<i>janitār</i>	<i>itlhrá</i>	<i>bahulá</i>	<i>ratá</i> .

On the other hand we have the secondary accent in—

εἴκοσι	τέταρτος	τρίπους	ὄνομα	θυγάτηρ.
Sk. <i>vinçatí</i>	<i>caturthá</i>	<i>tripád</i>	<i>náman</i>	<i>duhitá</i> .

An interesting case of the survival of the historic accent in Greek, though not coinciding with the secondary accent, is the accentuation of the second aorist infinitive. The Sanskrit thematic infinitive in *-dhyāi* in the majority of cases accents the thematic vowel (Whitney, *Sk. Gr.*, § 976), and this accent is preserved in Greek in the second aorist (e. g. *γενέσθαι*), though not in the other tenses.

Accentua-
tion in
Enclisis.

We may conclude by adding a word or two on the very difficult subject of the accentuation in cases of enclisis. We have already seen that the phenomena which come under the head of enclisis are cases of sentence-accent. Now the division of

where they coalesce with their case in a parathetic compound, as in *ἐπιτοπὸν, ἐκποδὸν, καταβραχὺν, διδ, καθὸ, ἐπισχερῶν*.

a sentence into words is always more or less artificial ; and in all languages what are in origin complete clauses, or at any rate phrases, come to be as it were stereotyped, and are pronounced and even written as one word. We need only instance cases like ἐκποδών, *quavis, quamlibet, notwithstanding, albeit*, etc. But the word-group as well as the individual word has its principal accent, which will vary according to the function or position of the group in relation to the surrounding groups. It is very probable, therefore, that no hard and fast rules can be laid down for the accentuation of these word-groups: the so-called 'enclitic' words were possibly not toneless under all circumstances, and indeed they are written orthotone even in modern editions when emphatic or occurring at the beginning of a sentence or clause (Chandler, § 945, etc.), and the rules that we find in the grammarians may be generalisations from particular instances of laws not really of universal application. Consistent with this supposition is the fact that the statements of grammarians on the subject of enclisis are irreconcilable with one another. The lists of enclitics are variously given, and the rules of accentuation appear under different forms. When we find one authority making ἔστων enclitic, while another says it is orthotone ; when Aristarchus writes ἄνδρα μοι but Herodian ἄνδρά μοι, the natural inference is that both are right, but neither exclusively so : that one form represents the accentuation prevailing under one set of circumstances, the other that prevailing under different conditions.

Amid this variation between our authorities one or two facts are yet universally acknowledged. No enclitic is of more than two syllables, and, with the exception of τινων, τινων, σφεων, the last syllable is always short. And in the case of these exceptions it is to be noticed that they are not, like που, ποτε, ποθι, etc., isolated words, but form part of an inflectional system ; so that it can hardly be doubted that their accent, or rather want of accent, is the result of the analogy of τινος, τινες, τισι, σφισι, σφεας, etc. All enclitics are of such a nature that, considering them to form one

phonetic unit with the preceding word, the secondary accent of this new compound falls on the first and not on the second element. As we said above, the principle of accentuation of Ζεύς ἐστι is the same as that of ἄζωστος, that of Ζεύς σου as that of πάντων.

We may notice, again, the case of the words of four *morae* not usually recognised as enclitics, but which nevertheless take a different accent according to their function in the sentence. ἡμῶν, ὑμῶν, etc., can never be enclitic in the full sense of the word; but when forming for all practical purposes part of the preceding word, they take the recessive accent, as a substitute for enclisis. Ζεὺς ἡμῶν for an inadmissible *Ζεύς ἡμῶν is as much a substitute for complete enclisis as ζυγὸν φερούμεθα for *ζυγόν φερούμεθα. And the fact that the accent does not pass to the preceding word in ἡμῶν, ἡμᾶς, ἡμῖν, has affected the accent of the form ἡμῖν, just as in the contrary direction τινος has affected τινῶν.

We may, however, notice that though the enclitic practically forms part of the preceding word, yet the combination of an orthotone word *plus* an enclitic is not one phonetic element in precisely the same sense as a single word is one. In λυθησοίμεθα there is nothing to prevent the full play of the law of three syllables and the recessive accent; in σῶμα τε, ἀνθρωποστε the pre-existing accent of the first element of the compound has to be taken into account. The normal case of enclisis is that in which the enclitic word is completely merged in the preceding word, and the accent is either that of the first element, or, where this is further from the end of the word than the law of three syllables permits, the recessive accent. The exceptional cases are those in which the individuality of the two elements is partially preserved, and we get an accentuation either of the last syllable of the second element (ἀνθρώπου τινός) or of the last syllable of the first (σῶμά τε). Cases like ἀνθρώπου τινός are instances of the principle we have discussed above: the accent of a word which is properly toneless, but which for some reason or other comes to be accented, would seem to be oxytone: ἀνθρώπου

τινός (enclitic) is parallel to παρὰ ἀνθρώπου (proclitic). In the case of σῶμά τε we may remark that no monosyllabic enclitic properly takes the accent in Greek; though this law may be in origin no more than the result of the analogy of such cases as καλός γε, αὐτός φησι, where the accent is regular.

In conclusion, we may remark that though individual cases present great difficulty, yet nothing exists to invalidate the assumption that the fundamental principle of enclisis is the law of the three syllables, and that the apparently abnormal cases of accentuation that occur are due to circumstances preventing that law being fully carried out. Individual points have yet to be cleared up: no explanation is as yet offered of the change of an acute accent to a grave on final syllables in the middle of a sentence, nor of the difference between the value of syllables for purposes of metre and of accentuation (λέλνται, metrically ∪ ∪ —): but, nevertheless, in Wackernagel's theory of the recessive accent and in the recognition of the validity of the law of three syllables in cases of enclisis, we have a satisfactory basis for a complete and scientific theory of the subject.

It remains that we should say a few words on the subject of accentuation in Latin. Accentuation of Latin.

The Latin system of accentuation stands in strong contrast to the Greek. It is true that the law of three syllables is common to both languages; neither in Latin nor in Greek does the main accent recede further than the third syllable from the end of the word, but in all other respects the two systems are totally distinct. Their main differences are two:—

(i) In Latin the quantity of the penultimate syllable determines the accent, that of the final syllable being of no importance: in Greek the quantity of the final syllable determines the accent, that of the penult being of no importance.

(ii) Oxytonesis is unknown in Latin, except where a

paroxytone word has lost its final vowel, e.g. *audín* for *audisne*.

The law of Latin accentuation is simply that the main accent falls on the penult if the penult is long, otherwise on the antepenult. Monosyllabic words have the acute, if the vowel is naturally short; the circumflex, if it is naturally long. It is clear, then, that in Latin what we have called the historic accent has completely disappeared, and its place has been taken by the recessive accent, whose position, however, is determined by conditions quite different from those operating in Greek. Nevertheless there are not wanting indications that the historic accent must once have existed in Latin, though disappearing before the beginning of literature.

The weakening of vowels in composition and reduplication—a phenomenon unknown to Greek—can point only to a primitive accent on the reduplication or prefix. Thus *tétigi* *tétigimus* must go back to an original *tétigi* *tétigimus*; for the stem being *tag-* (*ταγών*), the *a* could never have been weakened to *i* under the accent. Similarly, *péiero*, *confício*, *cógnitus* cannot have come from *peiúro* (supposing this to be the derivation), *confúcio*, *cognótus*. Rather in these cases the original accent was on the prefix, the verb itself being toneless (cf. Sk. *ápi asti*, Gk. *ἔπεται, κάθηται, ἔμπατος*, v. p. 271), and it is then drawn forward wherever necessary, in compliance with the law of three syllables.

Again, the syncopated forms of many words point to an original accent further than the third syllable from the end of the word. *Óptimus* shows that the older *ópitumus* could not have been accented on the antepenult, as the accented vowel could never have been lost. Similarly *súrgere* implies *súrregere*, not *surrégere*—*súrpui* implies *súrripui*—*Sámnium*, *Sábinium*—*bálnium*, *bálineum*—*réccidi*, *réceccidi*, etc.

Finally, the statement of Aulus Gellius (13. 25), that the vocative of *Valerius* was *Váleri* (for **Válerie*), might be taken as proof in Latin of the same shifting of the accent in the

vocative to the first syllable of the word that we have already seen (p. 275) to be characteristic of this case in Sanskrit, and of which one or two traces remain in Greek.

Enclisis occurs in Latin in the case of *-ne*, *-ve*, *-que*, etc. ; but the rule of accentuation is simply that the accent rests on the last syllable of the orthotone word (e. g. *rosáque*), whose proper accent is completely lost.

Prepositions are said to be proclitics when coming before their case, but otherwise orthotone : *circa moénia*, but *moénia circa*.

Enclisis occurs in Latin not merely in those cases where, as Enclisis. stated above, the accent of the finite verb is thrown back upon the prefix, but also in cases like *sítumst*, where *est* is enclitic exactly as *ἔστι* is in the Greek *καλόν ἔστι*. The same principle will also explain *póssum* (*pólis-sum*), *uón-vis*, *má-vis*, etc.

Again, we have primitive enclitic pronouns and particles preserved in *sí quis* (cf. *εἰ τις*), *núm quis*, *né-que* (cf. *οὐτε*), *utérque*, *hí-c*, *sí-c*, *altérre* (cf. *ἡ-δε*), *né-dum*, etc. Possibly, too, we may see enclisis in the case of some prepositions when following their case, e. g. *quócum*, *parúm-per*, *sém-per* (cf. Umbrian *trio-per* = '*per tria*,' '*ter*') : but this may be a purely Italic treatment of the prepositions, and is not necessarily at variance with the theory given above.

Other cases which may be put under the head of enclisis, inasmuch as the whole phrase in each case is accented as if it were one word, are *prófecto* (*pró facto*), *íllico* (*in loco*), *dénuo* (*de novo*), and, most interesting of all, '*igitur*,' which has been recently shown (*K. Z.* xxvii. 550) to be the enclitic form of '*agitur*,' originating in the common Plautine phrase (*Quíd agitur?*) *Quíd igitur?* It retains traces of its enclitic origin in classical Latin, in the fact that it cannot, as a rule, begin a clause.

The rule for the accentuation in enclisis in classical Latin is simply that the accent rests on the last syllable of the word before the enclitic, e. g. *tantóne*. But *tantóne* is for *tánto-ne*, according to the ordinary laws of Latin accentuation. In



cases like *tantăne*, where the accented syllable is short, we must probably see an extension by analogy of the accent of the more numerous cases of the type *tantône*; *tântăne* would be more natural.

Where the enclitic disappears as a separate syllable the accent remains on the last syllable of the new word—*illinc* for *illim-ce*, *audin* for *audis-ne*, etc.

Mr. U

our results are in most cases purely conjectural. Our instances are mostly taken from Victor Henry's work on *l'Analogie grecque* (Paris, 1883).

Parisyllabic stems as paroxytone keep the accent on the stem, and therefore, though there may be an alternation in the final vowel, it is never lost (De Sauss. p. 203). Parisyllabic stems.

The chief thing to notice here is the alternation of *o* and *e* in the final vowel of the stem. The question is a difficult one, but it is most probable that the nom., acc., dat. and abl. sing. and all the dual and plural show *-o*, the vocative, loc., gen. and instr. sing. show *-e*. Stems in *o(e)*.

Singular.	Plural.
Nom. <i>equo-s, jugo-m</i>	<i>equo-es, juge-ā.</i>
Voc. <i>eque, jugo-m</i>	(wanting).
Acc. <i>equo-m</i>	<i>equo-ms, juge-ā.</i>
Loc. <i>eque-i</i>	<i>equo-sue.</i>
Gen. <i>eque-sio</i>	<i>equo-om.</i>
Dat. <i>equo-ai</i> (?)	<i>equo-eis.</i>
Instr. <i>eque-a</i>	<i>equo-bhisms.</i>
Abl. <i>equo-ed</i> (?) }	

The singular presents no difficulty till we come to the locative. *Dom-i* points to an ending *-ei* rather than *-oi* (cf. *alternei* (?) *Carm. Arv.* as a loc.), in which case in Greek the truer type will be *πανδημε-ι*, while *οικο-ι*, etc., get *o* from the other cases.

The true gen. is missing in Latin in the *O*-declension. The form found is phonetically identical with the locative, and may possibly be an extension of the usage of this case.

The dative in *-o-ai* (?), *-o-i*, *-o* is found in Old Latin as *-oi* (*populoi Romano*i quoted by Marius Victorinus). The final *-i* disappears in Latin, but survives as *ι subscriptum* in Greek (*ἱππο*). Dative.

The instrumental may appear in *illāc* (*ille-a-ce*), etc., which in this case will not be feminine. That the *a* was originally short is proved by Greek *ἄμ-ᾶ*, *πῆδ-ᾶ*, etc. Instrumental.

The ablative *equo(e)d* becomes *equo-(d)*. The *-d* is found constant in the oldest inscriptions (e.g. that of Duilius and the *Sc. de Bacch.* where 'in agro Teurano' ad fin. is a later addi-

tion). It disappears about the sixth century, but was preserved in legal forms, and as an archaism in Ennius and Plautus (but cf. e.g. *absentē te Most.* 1139). In the MSS. of Plautus it is only preserved in *med*, *ted*, (*sed*), and many of the places where it was supposed to be found have been altered by Fleckeisen, Brix, etc. (cf. *Trin.* 10, 540, 726, *M. G.* 4, *Stich.* 216, *Bacch.* 428, 941). It also survives in *antid-ea*, *postid-ea*, *anted-hac*, *prod-ambulare*, *prod-est*, *se-d*, *red-itus*. But it is only seen in *A*-, *O*- and *U*-stems, not in *E*-stems. *Facilumed* in *Sc. de Bacch.* is the only instance of an adverb.

It would seem probable that there was originally a vowel before the *-d*, as otherwise the long final syllable is hard to account for, though it has been supposed to be on the analogy of the *A*-stems (*M. U.* ii. 208). If the vowel existed, its nature is quite uncertain.

Nomina-
tive plural.

The termination *-i* of the nom. plural of this declension in Greek and Latin comes from the pronominal system, possibly on the analogy of the neuters, the relation *is-tū* : *jug-ā* producing *is-tī* : *eq-uī* (Henry, *Anal. grecque*, p. 232). On the original *-ā* of the neuters see p. 62.

On the gen. in *-rum*, which has supplanted the true gen. in *-ōm* (*de-um*, *fabr-um*, etc.), v. p. 339.

Dative.

The loc. plur. does not appear in Latin. The form *equīs* (*equeis*) may be dative; *equoeis* would give *equōis*, *equōis* (cf. **ἵπποις*, **ἱπποῖς*), which by a later change becomes **equeis* and *equīs*. An older form survives in *ab oloes* (Paul. *Fest.* 19). Osthoff says that *oī* (*oe*) in unaccented syllables regularly becomes *ī*, which will explain the nom. and dat. (*Z. G. d. P.* 198). The abl.-instr. does not appear in *O*-stems.

A-stems.

Nom.	<i>mensā</i>	<i>mensā-es.</i>
Voc.	<i>mensā.</i>	
Acc.	<i>mensām</i>	<i>mensā-ms.</i>
Loc.	<i>mensāi</i> (?)	<i>mensā-sue.</i>
Dat.	<i>mensā-ai</i> (?)	<i>mensā-eis.</i>
Gen.	<i>mensā-es</i>	<i>mensā-om.</i>
Abl.	<i>mensā-(e)d</i>	<i>mensā-bhīams.</i>

Very little in the above scheme can be considered certain. One law seems to run through it, that where the *O*-declension has *ō* as the final vowel, this has *ā*; where that has *ē*, this has *ā* (De Sauss. pp. 93, 135, 217, Brug. *Stud.* ix. 371)¹.

With regard to this declension, it seems probable that *āi* in an unaccented syllable becomes *ī* (cf. *caedo* beside *cōncido*), *āi* under the same conditions becomes *ae* (*Z. G. d. P.* 199), hence dat. sing. *mensā-ai*, *mēnsāi*, *mēnsae*. In this case *mēnsis* can only come from *mēnsā-is* through *mēnsāis*, *ā* being shortened on the analogy of *equō-is* (*equis*). But in the nom. plural the form must have been *mensā-i* (not shortened to *mēnsā-i*, **mēnsī*) according to the proportion *equō-m* : *equō-i* = *mēnsā-m* : *mēnsā-i*. But further, *-āi* accented becomes *-ae*, and so *hā-i* = *hae*, and the analogy of such forms may have been extended to polysyllabic pronouns and eventually to substantives. However the nom. plural may be dual in origin (*K. Z.* xxvii. 199).

As to the gen. of *A*-stems, the oldest form is *-as* (*Latonas, vias*, etc. in Liv. Andr., Enn., Naev.; *Alcumenas*, Plaut. (?) *Amph.* arg. 1; always in *pater-*, *mater-familias*. It may also survive in adverbial gen. *alias*, *alternas* (Fest.), *utrasque*, etc. (cf. *intervias Aul.* 377, etc.) We also find *-ais*, *ai*, the last of which is common in Oscan in masc. stems, though feminines have *-as*. The termination *-āi* early went out of use, and even in Plaut. is an archaism; e. g. *M. G.* 103, a caricature of the style of public documents. According to Nigidius (Gell. 13. 26), the gen. is *terrai*, the dative *terrae*, but this was merely a graphic distinction (cf. Quint. 1. 7. 18).

A gen. in *-aes* only appears in plebeian inscriptions, mostly in women's names (*Pesceniaes*, *Laudicaes*).

The other cases have been discussed above.

In the imparisyllabic inflexion the primitive forms with the Ablaut in declension leave traces only in Greek and some of them have been discussed above. Latin has extended either the strong or the weak form throughout.

¹ Cf. in compounds *ἑννέ-δαμος* beside *νικη-φόρος* and voc. *ἑννε* beside *νύμφα*.

Nom. <i>iéug-s</i> (strong inflexion)	con-jux.
Acc. <i>iéug-m</i>	con-jüg-em.
Loc. <i>iéug-i</i> .	
Dat. <i>iug-ai</i>	con-jüg-i.
Gen. <i>iug-as</i>	con-jüg-is.

Latin has universalised here the weak stem.

Themes containing an *ǝ* that cannot be lost change *ǝ* to *ě* originally in the weak cases (*K. Z.* xxv. 14):—

<i>pǝd-s</i> (strong inflexion)	pēs.
<i>pǝd-m</i>	pědem.
<i>pǝd-i</i> or <i>pěd-i</i> .	
<i>pd-ái</i> or <i>pd-ái</i> (<i>bd-ái</i>)	pědi.
<i>pd-as</i> or <i>pd-ós</i> (<i>bd-ós</i>)	pědis.

Latin has universalised the vowel of the weak cases, Greek that of the strong. The form of the dat. and gen. may have been originally *pd-ái* (*bd-ái*), *pd-ós* (*bd-ós*), cf. Zend *fra-bda*, Greek *ἐπι-βδαι* (*K. Z.* xxv. 59), and if this is so, the locative alone, in which the accent is doubtful (p. 324), would have originally exhibited *ě*.

Whether there was the same Ablaut in the case of *uǝg-s*, that is, whether *ωψ*, *δπός*, *vǝx*, *vǝcis* represent an earlier *uǝgs*, *uǝg-as* can only be decided by analogy, as Indo-European *uo*, *ue* both become ordinarily Latin *vo-* (p. 189, *K. Z.* xxv. 15). Sanskrit in this word perpetuates the strong form (*vák*, *vácam*, *vácá*, *vācé*, *vācás*, *vācí*, as against *pád*, *pádam*, *pádá*, *pádé*, *pádás*, *pádí*), but this may be by analogy. The short vowel appears in Latin in *vǝco*.

Dǝx, *dǝcis* seems more regular, as it has an Ablaut of quantity, though not, at any rate ostensibly, of quality; still *dǝx* may be for *doux*, *deux* (cf. *douco*).

For the lengthening of the vowel in the nominative singular of these monosyllabic roots cf. p. 334.

Of the monosyllabic themes in *éu*, the most remarkable is that which gives Sanskrit *dyāús*, Greek *Zeús*, Latin *Ju-piter*.

Nom. *Dǝūs*, Sanskrit *dyāús*, Greek *Zeús* for **Zǝús*. The Latin representative would apparently be **jǝus* **jūs*, where *dǝ*

Diph-
thongal
stems.

✓*dǝu*.

becomes *j*, a change which only takes place in this word : here too, where it is not used as a proper name, we get *dies* (= *diēus*) cf. *Dies-piter*.

It seems doubtful whether a termination *-eum* ever existed. In verbal inflexion Sanskrit has *ábhū*, *ábhut* but *ábhuvam*, avoiding **abhum*. Greek allows *ἔφυν*, but no word ends in *-ευν* except Ionic forms like *ἐπολευν*. So we should perhaps expect an acc. *Diēum*, the *m* becoming sonant. But even of this there is no trace in Sanskrit or Greek, which have *dyām*, *Zḥν-(a)*, (*Zḥν*). This would represent Indo-European *Diēm*, which may survive in Latin *diem*. In Sanskrit the oblique cases have a double stem, *dyo-* and *dyu-* (before vowels *div-*). Thus we get *divam* = *Δίφα* and *dyām* = *Zḥν*. *Diēum* is not represented in Greek (it would become **Zeua*), but exactly corresponds to Latin *Jovem* (*joy-η*) (p. 87). The Latin inflexion is based on this strong stem *joy-*, so that we even find a new nom. *Jovis* formed as from an *I-* stem (cf. *nāvis* : *vaūs*, p. 348). For comparison, we may put side by side the Indo-European, Sanskrit, and Greek forms of the other cases :—

Loc. <i>Diēu-i</i> ,	Sanskrit <i>divá</i> ,	<i>dyávi</i>	<i>Δί.</i>
Dat. <i>di-u-ai</i>	<i>divé</i> ,	<i>dyáve</i> .	
Gen. <i>di-u-as</i>	<i>divás</i> ,	<i>dyós</i>	<i>Διός.</i>

diu is perhaps an instrumental, and may be compared with the Sk. instr. *divá*, as *diutinus* answers to the Sk. *divátanas* (*K. Z.* xxv. 59). *Dis* possibly stands for *Diys*, and *biduum* for *bidium*.

Nundinae perhaps is not to be connected with this stem *diēu*, *div*, but goes back to an original nom. *deion*, gen. *dinós*, with which we may compare the Sk. *dínam* (*K. Z.* xxv. 23).

Take again the root *gōu*.

✓ *gōu*.

In Sanskrit we have strong stem *gāv*, weak *gav*.

Sanskrit nom. *gāús*, Greek **βῶυς*, *βοῦς*.

acc. *gām* *βῶν* (*H.* 238).

gen. abl. *gós* *βοός*.

instr. *gávā*.

dat. *gáve*.

loc. *gávi* *βοί*.

In Latin we have *bōs* for **bōs*, otherwise the weak stem is extended to all cases with the exception of *bō-bus* (*bōm-bus*), *boum* (*boum*). Before vowels we should have expected *ou* unaccented to have become *ū* (cf. *dēnuo*=*dē nouo*), but the analogy of the other cases has prevailed. *Bov-i-bus* is on the analogy of the *I*-stems. *Nāvis*, as remarked above, has become an *I*-stem, but with the strong stem throughout, corresponding to Greek *νηὺς* *νηός*.

Themes in
ei, weak
inflexion.

Nom. Sing.	<i>οὔϊ-s</i> , cf. <i>βάσις</i>	<i>ovis</i> .
Voc.	<i>οὔϊ</i> .	
Acc.	<i>οὔϊ-m</i> <i>βάσω</i>	* <i>ovim</i> .
Loc.	<i>οὔϊ-i</i>	<i>ovi</i> .
Dat.	<i>οὔϊ-αῖ</i> .	
Gen.	<i>οὔϊ-ας</i> <i>βασε-ος</i> , <i>βάσεως</i> .	
Nom. Plur.	<i>οὔϊ-es</i> <i>βασε-ες</i> , <i>βάσεις</i>	<i>ovēs</i> .
Acc.	<i>οὔϊ-ms</i> <i>βασι-vs</i>	<i>ovīs</i> .
Gen.	<i>οὔϊ-om</i> <i>βασε-ων</i>	<i>ovium</i> .
Abl.	<i>οὔϊ-bhιms</i>	<i>ovibus</i> .

The accus. sing. *ovem* is on the analogy of the consonantal stems, but cf. *partim* (beside *partem*, with differentiation of usage), *turrim* (*Aen.* 2. 224 vouched for by Gell. 13. 21, as more euphonious), *stati-m* (cf. *stati-o*), etc. In many cases the MSS. vary between *-im* and *-em*.

On the abl. and instr. of this type v. p. 341. The gen. *ovis* seems formed on the analogy of consonantal stems, the stem being taken to be *ov-* (contrast *διός*).

The nom. plural was sometimes written *-īs* on the analogy of the acc., but this is rare in the oldest inscriptions.

The acc. plural in *-is* (for *-i-ns*) is the correct form in *I*-stems, in which alone it is found, except in plebeian inscriptions. The grammarians lay down that the acc. plural in *-es* may be used both in consonantal and in *I*-stems, that in *-is* in *I*-stems only. But the question of usage was much disputed by the ancients themselves; Varro, Probus, Pliny, Charisius, Priscian, all have different theories. The philological question is clear; as to the usage we may say with Probus (Gell. 13. 20),

Noli laborare utrum istorum debeas dicere, urbis an urbes:—nam nihil perdes utrum dixeris.

The inflexion of *eu*-stems seems weak, but there can hardly be any difference between the strong and weak inflexion of this type in Latin:—

Sing. *gradu-s*

Plural *gradēu-s*.

gradēu.

gradu-m

gradu-ms.

gradēu-i

gradēu-om.

gradēu-ai

gradu-bhīams.

gradēu-əs.

eu became *ou* in Latin, and then *u* in an unaccented syllable, so that the type at once simplifies itself. The dat. and loc. sing. both become *graduī*.

The oldest form of the gen. is *senatuos* in *Sc. de Bacch.* The next step was a form *-uis*, which Gellius (4. 16) says was always used by Varro and Nigidius in *senatuīs, domuīs, fluctuīs*. He also quotes *anuīs* from Ter. *Haut.* 2. 3. 46 (cf. *quaestuīs, Hec.* 735). This becomes *-ūs*, apparently by *i* changing to *ū*.

But from Ennius to Lucretius we get almost regularly a gen. in *-i* from the analogy of the *O*-stems (*quaesti, Most.* 1107, *sumpti, Trin.* 250, *fructi, Adelp.* 5. 4. 16, *adventi, Phorm.* 1. 3. 2): *senati* occurs in Cic. *Div. in Caecil.* 5. 19, cf. Quint. 1. 6. 27.

Gradu-i would seem to be a locative; *gradū-(d)* is the true abl.; the form *gradu* sometimes used as a dative may be an instr. (*gradu-e*) which has come to be indistinguishable in form from an abl.

The plural presents no special difficulty. On *currū* for *curruum* v. p. 338.

Themes in -on, -en (corresponding to those in *-tor, -ter*):—

A. *tér-m-on-(s)*

lih-én.

B. *dō-tōr(s)*

pa-tér(s).

Nasal and liquid stems.

term-on-m

lih-en-m.

dō-tōr-m

pa-ter-m.

term-en-i

lih-en-i.

dō-ter-i

pa-ter-i.

term-n-ai

lih-n-ai.

dō-tr-ai

pa-tr-ai.

term-n-ís

lih-n-ís.

dō-tr-ís

pa-tr-ís.

A. These have produced on the one hand *termo termōnis* with the strong termination carried throughout, on the other hand *term-i-nus*, with a *svarabhākti* vowel from the weakest stem. The weakest stem is also seen in the neuter *termen*, Greek *τέρμα* (*ter-mē*). But as a declension with cases of varying length is strange to Latin, except in the monosyllabic stems, an original *hemo*, *hemōnem*, *hemeni*, *homnis* has been assimilated to *homo hominis*, etc., either by the analogy of the loc., or the introduction of a *svarabhākti* vowel. A trace of the original Ablaut is however seen in *hemōnes* quoted from Ennius (Paul. *Fest.* 100, Enn. *Ann.* 141 Vahl.).

B. The result in Latin in these stems has been given above (p. 297 sqq.).

Themes in
-os (-es).

Themes in -os (-es) (strong inflexion).

Oxytones of the type αἰδώς cannot lose o, so as a substitute it is changed to ε (cf. πῶς *πεδός):—

αἰδώς	cf. labōs.
*αἰδόσα	labōsm.
*αἰδεσός (αἰδοῦς)	labesīs.

Greek has universalised ὀ, Latin mostly ō, but cf. *arboſ*, *arbōris*.

Oxytones of the type ἀναιδής cannot, from the nature of the case, lose the last vowel. Accordingly we get—

ἀναιδής	cf. <i>degenēs</i> (cf. <i>ἐγγενής</i>).
*ἀναιδέσα (ἀναιδῆ)	<i>degenēs</i> m.
*ἀναιδεσός (ἀναιδοῦς)	<i>degenēs</i> s.
*ἀναιδέσες (ἀναιδεῖς)	<i>degenēs</i> es.

Oxytone
themes in
-ūt.

Oxytones in -ūt (strong inflexion):—

λιπ-όντ-ς	cf. <i>s-ōnt-s</i> (sons).
λιπόντ-α	<i>s-ōnt-m</i> (sonem).
*λιπ-α-τός	<i>s-nt-īs</i> (prae-sentis).
*λιπ-έν-τι (?)	<i>s-ēn-ti</i> (prae-senti).

Cf. Sanskrit *adán*, *adatás*. Greek generalises the strong stem in λιπών λιπόντος, ὢν ὄντος, Latin the weak in *prae-sens*, *absens*, and all other pres. parts.; the strong in *sons sontis*.

Paroxytones in -os —

I.-E. μέγ-os	ἐπ-os	cf. opos.
μέγ-es-os	ἐπ-es-os, ἔπους	operis.
μέγ-es-i	ἐπ-es-i, ἔπει	operi.
μέγ-es-ā	ἐπ-es-a, ἔπη	opera.

Paroxy-
tone
themes
in -os.

The nom. plural may have been μέγ-os-a, but no trace is left of this form.

Themes in -ios (comparatives) paroxytone.

Compa-
ratives.

In Greek and Sanskrit these stems are complicated by the introduction of an *n*, which does not however appear in Latin:—

I.-E. νέμ-io(n)s	Sk. nárjān, cf. Gk. μέγ-ιους	Lat. mel-iōs.
Acc. νέμ-ιος-η	nárjānsam	μέγ-ιουσα mel-iōsḡ.
Loc. νέμ-ιος-ι	nárjasi	μέγ-ιουσι mel-iesi.
Dat. νέμ-ιος-αι	nárjase	μέγ-ιουσαι mel-iesai.
Gen. νέμ-ιος-ος	nárjāsas	μέγ-ιουσος mel-iesis.

Latin and Greek have both universalised the strong stem, the former with the long vowel of the nom., the latter with a short vowel and the addition of *ν*. As a paroxytone stem the root is never reduced.

Paroxytones in -nt:—

φερο-ντ(s)	Sk. bháran	*feront-s.
*φέρ-ατ-os	bháratas	ferentis.

Paroxy-
tone
themes
in -nt.

Latin has universalised the weak stem. The Sanskrit gen. bháratas (= bhárntas) is irregular, as in a paroxytone stem the vowel ought not to disappear entirely.

There are two types of Heteroclite Neuters (De Sauss. p. 223):—

Hetero-
clite
neuters.

(i) With strong root accented (Ablaut I or II), sometimes with the addition of *r* or *i*, e.g. kórd, íc̑r-r, óqs-i (Sanskrit ák̑ṣi, Greek dual ὄσσε for ὄqσι-ε).

(ii) Weak root unaccented with the addition of the suffix -én, which is in its turn reduced in the weak cases, e.g. k̑d-én, k̑d-ŋ (Gothic hairt-ins), íc̑én, íc̑ŋ.

The first type forms the nom. acc. sing., and those cases

where the termination begins with a consonant. In the nom. acc. it is accompanied by a *-t*.

The second type forms those cases where the termination begins with a vowel. Here the Greek, but no other language, introduces a *-t*.

Thus theoretically we have originally—

Sing. nom.	<i>ἰέqr̥t</i>	Gk. ἡπαρ(τ)	<i>jēc̥r̥(t)</i> .
loc.	<i>ἰeq-én-i</i> (?)	<i>ἡπ-έν-ι</i> (?)	<i>jecini</i> .
gen.	<i>ἰeq-n-ós</i>	<i>ἡπ-α-(τ)-ος</i>	<i>jecinis</i> .
Plur. nom.	<i>ἰeq-n-ā</i>	<i>ἡπ-α-(τ)-α</i>	<i>*jecina</i> .
gen.	<i>ἰeq-n-om</i>	<i>ἡπ-α-(τ)-ον</i>	<i>jecinum</i> .

Latin has generalised the nominative form, but with the root vowel of the weaker cases, and thus has produced *jecōris*, and by a double contamination *jecinoris*. Similarly *feminis* has produced *femen*, *femur* has produced *femuris* (v. p. 304).

CHAPTER XIII.

PRONOMINAL INFLEXION.

THE Pronouns (*ἀντωνυμῖαι*) were so called from the fact of their being able to stand in the place of nouns. They also distinguish persons in discourse. We have already distinguished roots into Predicative and Pronominal. The latter were few in number and deictic in meaning, and this was probably the original meaning of all pronouns. The Greek grammarians distinguished the pronouns into *δεικτικά* and *ἀναφορικά*. Our own terms Demonstrative and Relative come through the Latin, and have lost their original meaning. A Deictic pronoun denotes the different persons and objects in speech by their position to the speaker, e. g. *this (here)*, *that (there)*, etc., while an Anaphoric pronoun picks up what is already known or has been previously spoken of. Our own term Demonstrative, then, includes much that the Greeks termed Anaphoric, while the term Relative has become restricted to that class of pronouns which combine the pronoun with the function of a conjunction and serve to bind sentences together.

As far as Greek inflexion is concerned we may divide the pronouns into those which mark the distinctions of gender and those which do not.

The personal pronouns do not mark distinctions of gender. The 1st and 2nd person and the singular reflexive *ἐ* may be regarded as inherited from the original language. The plural of the personal pronouns was originally distinguished from the singular by a difference of stem, and not by a difference of inflexion.

Thus beside	<i>ἐμέ</i>	we have the Epic plural	<i>ἄμμε</i> ,
beside Doric	<i>ἐμίν</i>	we have	<i>ἄμιν</i> ,

A 2

where the inflexions are those of the singular number. However, as the pronouns were frequently used in apposition to, or as predicates with plural nouns, they in time adopted similar inflexions. Thus instead of Aeolic ἄμμε, Doric ἀμέ, we have the Ionic ἡμέας, Attic ἡμᾶς.

The original stems, then, *ḡsme-*, *ḡusme-* (Sk. *asma-*, *yusma-*), were singular in form and collective in meaning, like English *host*, *folk*, *crew*, etc.

Just as in Attic ἡμᾶς has replaced an original ἡμε, so ἡμῶν has replaced an original ἡμειο, answering to ἐμεῖο (= ἐμεσιο), and ὑμῶν an original ὑμειο, answering to σεῖο (= τφεσιο). The datives ἡμῖν and ὑμῖν have not pluralised their ending, but in the 3rd person beside Ionic and poetic σφί(ν) we have the prose form σφίσι(ν).

First
person
Nominative.

Taking the different cases in detail, we find the nominative of the 1st personal pronoun

ἐγώ

Sk. *ahám*

side by side with the stems *με-*, *μο-*, Sk. *ma-*. In Homer before a vowel we have ἐγών. The origin of the termination is unknown. In Boeotian, γ was dropped and ε became ι before ο, according to the rule of the dialect. Hence ἰώ, Ar. *Acharn.* 898.

Dual.—For the stem *vo-* of the dual nominative νώ we may compare Lat. *nos*, Sk. *nas*.

Plural.—The aspirate of the nom. pl. ἡμεῖς, Dor. ἀμές, is due to the analogy of ὑμεῖς, where the rough breathing is regular. In Aeolic, ἄμμες. The plural ending of ἡμεῖς is a new formation, after the model of σαφεῖς, etc.

Second
person
Nominative.

Nom. Sing.—The nom. *τύ, σύ*, stem *τφε*, *τφο*, Sk. *tva*, and *τφε-*, *τφεο-*, Lat. *toro-*, from *teyo-*.

Homeric *τύνη*. The Doric form as given in Aristophanes is *τύ*. The σ of *σύ* has come in from other cases where τ and σ stand for original *tv*.

Nom. Plural.—The plural stem is *ύσμε-*, Sk. *yusma-*, I.-E. *ḡu-sme-*. The Greek aspirate of ὑμεῖς is a regular representative of Sk. *y*. Aeolic ὕμμε, like ἄμμε, shows no aspirate.

Accusative.

Acc. Sing.—*με*, *έμέ*

τφε σέ Doric *τέ*.

The form *τίν* (Theocr. 12. 55, etc. *ὡς κατέδυν ποτὶ τίν*) answers to the *μίν* and *νίν* of the 3rd personal pronoun.

Acc. Plural.—Aeolic *ἄμμε*, *ὑμμε*, Doric *ἄμέ*, *ὑμέ*. The ending has been pluralised in Ionic *ἡμέας*, *ὑμέας*, Attic *ἡμᾶς*, *ὑμᾶς*.

<i>Dative Sing.</i>	<i>μοι</i> , <i>ἐμολ</i>	Sk. <i>me</i> .	<i>Dative.</i>
	<i>τφοι</i> Dor. <i>τοί</i> Att. <i>σοί</i>	Sk. <i>té</i> .	

Plural.—Aeolic *ἄμμιν*, *ὑμμιν*, Att. *ἡμῖν* and *ἡμιν*, as well as *ὑμῖν* and *ὑμιν*. For the ending cf. Dor. *ἐμίν*, *τίν*, Ep. *τείν*.

The epic *ἄμμι*, *ὑμμι*, without *ν*, perhaps follow the analogy of *σφί*.

Dual.—In the dual *νῶ-ιν*, *σφῶ-ιν*, Att. *νῶν*, *σφῶν*, the termination *-ιν* is added to the nominative and accusative forms; cf. Lat. *ambo-bus*.

All the forms of the genitive are genitives of possessive Genitive. stems with suffix *-σχο* :—

<i>ἐμε-σχο</i>	<i>ἐμεῖο</i>	<i>ἐμέο</i>	<i>ἐμοῦ</i> .
<i>τφε-σχο</i>	<i>σεῖο</i>	<i>σέο</i>	<i>σοῦ</i> .

Sk. *me* and *te* do duty for genitive as well as dative.

Plural.—In the plural the original *ἄσμε-σχο*, *ὑσμε-σχο* were pluralised into epic *ἡμέλων*, *ὑμέλων*, and Attic *ἡμῶν*, *ὑμῶν*.

The stem of the 3rd pers. pronoun is *σφε-*, *σφο-*, Sk. *sua*, Third personal reflexive pronoun. and the fuller form *σφε-*, *σφο-*, Lat. *sovo-*, from *seho-*.

Acc. *Fe*, *ξ*, and in Homer also *έέ*.

Dat. *φοι*, *οἴ*, like *ἐμολ*, and in Homer also *έοἴ*.

Gen. *Feio*, *είο*, *έο*, *οῦ*, from *σφε-σχο*, like *ἐμεῖο*.

Apart from comparison with Latin and Sanskrit, the loss of the spirants can be proved in Greek from the metre of Homer. Not only is a preceding short syllable lengthened by position, but a short vowel is lengthened in arsis before the cases of this stem (Monro, *H. G.* § 39).

The forms beginning with *σφ-* arose in all probability out of *σφι*, *σφιν*. Thus we have the plural forms *σφεῖς*, *σφέλων*, *σφῶν*, *σφισι*, *σφέας*, *σφάς*, and the dual forms *σφῶέ*, *σφῶίν*, made out of *σφέ*, *σφίν* by the intrusion of *ω*. In Aeolic, *σφε*

appears as *ἄσφε*. The word *σφε* is not, like *ξ*, to be identified with Sk. *sva*. The origin of the stem remains unexplained. In Ionic there is a neuter plural *σφέα*.

No other Indo-European language has a plural for this pronoun, and the substantival use of the pronoun is in the Arian languages rare (Delbrück, *S. F.* iv. ch. x).

We may here notice other forms of the reflexive pronouns in Greek.

For the 1st person we have acc. sing. *ἐμαυτόν*, but for the 2nd person, beside *σαυτόν*, we have *σεαυτόν*, and for the 3rd, *ἐαυτόν*, as well as *αὐτόν*. The forms *σεαυτόν*, *ἐαυτόν* cannot well be explained as compounded of the monosyllabic *σε-* and *ἐ-* with *αὐτόν*. Under such circumstances elision or crasis of the vowels would ensue in Greek.

In Homer we have the possessive *ἐμός* and also, beside *σός* and *ός*, the forms *τεός* and *έός*: we also find *ἐμοί* beside *μοι*, and *τεῖν* and *έοι* beside *σολ* and *οἷ*: and again *ἐμέ*, *έέ*, as well as *με* and *ξ*.

Now the stem of *τεός* is *τεφο-*, *τεφε-*, and the stem of *έός* is *σεφο-*, *σεφε-*, cf. Lat. *suus*. The reduced forms of these stems will be *τφο-*, *τφε-*, and *σφο-*, *σφε-*,

αὐτόν then stands for *σφε-αυτον* = *σφ αυτον* = *φ αυτον* = *αὐτόν*.

ἐαυτόν stands for *σεφε-αυτον* = *σεφ αυτον* = *έφ αυτον* = *ἐαυτόν*.

In the same way *σαυτόν* (for *τφ αυτον*) comes from the reduced stem *τφε-*, while *σεαυτόν* (for *τεφ αυτον*) comes from the fuller stem *τεφε-*, with the change of *τ* to *σ*, as in *τύ* to *σύ* (*K. Z.* xxvii. 279).

Possessive Pronouns. The stems of the personal pronouns were used adjectivally and declined as *O*-stems.

Thus *ἐμός-s* for *μο-s*, *σός* for *τφο-s*, Sk. *tva-*. Homeric *τεός* from stem *τεφο-*.

Aeolic has *ἄμμος*, *ὑμμος*, and Doric *ἄμός*, *ὑμός*. The comparative formations *ἡμέτερος*, *ὑμέτερος*, Lat. *noster*, *vester*, are not primitive.

Third Person. *Φος*, *ός* Sk. *sva-* Epic *έός* Lat. *sovo-*.

Under the head of this stem perhaps comes the Homeric *ός*,

as seen, for instance, in such phrases as $\theta\epsilon\delta\nu\ \acute{\alpha}\omega\varsigma$, and the neuter $\acute{\alpha}\omega\delta$ in $\delta\tau\tau\iota$, $\delta\tau\iota$ — $\delta\pi\pi\omega\varsigma$, $\delta\pi\omega\varsigma$ —where the double $\tau\tau$, $\pi\pi$ was simplified in order to correspond with $\tau\acute{\iota}$, $\pi\acute{\omega}\varsigma$, etc.

$\sigma\phi\acute{\omicron}\varsigma$ and $\sigma\phi\acute{\epsilon}\tau\epsilon\rho\omicron\varsigma$ are new formations on the analogy of $\delta\varsigma$ and $\eta\acute{\mu}\epsilon\tau\epsilon\rho\omicron\varsigma$, while from the dual stem come the Homeric $\nu\omega\acute{\iota}\tau\epsilon\rho\omicron\varsigma$, $\sigma\phi\omega\acute{\iota}\tau\epsilon\rho\omicron\varsigma$.

We now pass on to those pronouns, whether demonstrative or relative, in which the distinctions of gender are marked.

Second
Class of
Pronouns.

The pronoun δ , η , $\tau\acute{\omicron}$ answers to the Sanskrit $s\acute{a}\varsigma$, $s\acute{á}$, $t\acute{á}\delta$. The pronominal origin of this word is clear from the usage of Homer. There it is used as an anaphoric pronoun, and subsequently came to be employed as the definite article (Monro, *H. G.* § 257). Such is the history of our own definite article, while all the Romance languages have turned the Latin *ille* to the same purpose.

Pronouns
marking
distinc-
tions of
gender.
 δ , η , $\tau\acute{\omicron}$.

In Greek the inflexion of δ , η , $\tau\acute{\omicron}$ has been assimilated to that of the *A*- and *O*-declensions. Remains of an originally distinct inflexion are to be discerned in the nom. and acc. neut. sing. $\tau\acute{\omicron}$, which has not the regular neuter ending $-\nu$. The final consonant, which is to be seen in Latin *id*, *quid*, Sanskrit $t\acute{á}\delta$, has disappeared in Greek, but remains in the compounds $\acute{\alpha}\lambda\lambda\omicron\delta$ - $\acute{\alpha}\pi\acute{\omicron}\varsigma$, $\pi\omicron\delta$ - $\acute{\alpha}\pi\acute{\omicron}\varsigma$.

The noms. plural $\omicron\acute{\iota}$, $\alpha\acute{\iota}$, for original $\tau\omicron\acute{\omicron}\acute{\iota}$, $\tau\alpha\acute{\iota}$ as in Doric, with which we may compare Sk. $t\acute{é}$, have become the model for the plural of *A* and *O* nominal declensions. The two declensions reacted on one another. Thus, while the Sanskrit has dat. sing. $t\acute{á}\text{-}sm\text{-}\acute{a}i$, Greek has $\tau\acute{\omega}$, like $\eta\pi\pi\omega$: in the masc. gen. pl. Greek has $\tau\acute{\omega}\nu$, like $\eta\pi\pi\omega\nu$, but Sanskrit $t\acute{é}\text{-}s\acute{ā}m$. The fem. gen. pl. $\tau\acute{\alpha}\omega\nu$ corresponds to Sanskrit $t\acute{á}\text{-}s\acute{ā}m$, and is similar to the gen. pl. of the *A*-declension, e.g. $\theta\acute{\epsilon}\acute{\alpha}\omega\nu$, $\theta\acute{\epsilon}\acute{\omega}\nu$. Doric has gen. plural $\tau\omicron\upsilon\tau\acute{\omega}\nu$, $\tau\eta\nu\acute{\omega}\nu$, $\acute{\alpha}\lambda\lambda\acute{\omega}\nu$ (Ahrens, 2. 31), as though from $*\tau\omicron\upsilon\tau\acute{\omicron}\text{-}\sigma\omega\nu$, etc.

$\delta\varsigma$.—The Greek $\delta\varsigma$ in such phrases as $\eta\ \delta'\ \delta\varsigma$ answers to Sanskrit $s\acute{á}\text{-}\acute{s}$.

$\delta\delta\epsilon$.—The Homeric $\tau\omicron\iota\sigma\delta\epsilon\sigma(\sigma)\iota$ is an instance of double

inflexion, both of the demonstrative and the suffix $-\delta\epsilon$: $\delta\delta\epsilon$ cannot be regarded as primitive, for we are unable to find a parallel in Latin or Sanskrit.

To the same stem belong the adverbs $\omega\delta\epsilon$ and $\omega\varsigma$ (so).

$\tau\omicron\upsilon\tau\omicron$ for $\tau\omicron-\upsilon-\tau\omicron$ results from a doubling of the demonstrative connected by υ , the reduced form of $a\upsilon$ answering to the enclitic Sanskrit u , a particle meaning 'further,' 'and,' etc. Sanskrit u often goes immediately with pronouns, e.g. $\acute{s}a\ u$ (written $\acute{s}u$). (Delbrück, *S. F.* iv. 10.)

ἐκεῖνος.

In the inflexion of Attic $\epsilon\kappa\epsilon\iota\nu\omicron\varsigma$, epic and poetic $\kappa\epsilon\iota\nu\omicron\varsigma$, Aeolic $\kappa\eta\nu\omicron\varsigma$, there is nothing to notice. The diphthong $-\epsilon\iota-$ is not original, and before the archonship of Euclides was represented on Attic inscriptions by $-\epsilon-$.

αὐτός.

The origin of the oxytone $\alpha\upsilon\tau\omicron\varsigma$ is unknown; its declension resembles that of $\acute{o}$, η , $\tau\omicron$. As to the absence of $-\nu$ in the nom. and acc. neut. sing. it may be remarked that this $-\nu$ was early added to some words, as for instance in Homer we have only $\tau\omicron\iota\omicron\upsilon\tau\omicron\nu$, $\tau\omicron\sigma\omicron\upsilon\tau\omicron\nu$.

There is a gloss of Hesychius, $\alpha\upsilon\varsigma\ \alpha\upsilon\tau\omicron\varsigma$. $\text{Κρήτες καὶ Λάκωνες}$. This $\alpha\upsilon\varsigma$, which appears on inscriptions, is explained as a reduction of $\alpha\upsilon\tau\omicron\varsigma$, occurring especially where another case of the same word follows, e.g. $\alpha\upsilon\tau\omicron\varsigma\ \alpha\upsilon\tau\acute{\alpha}\varsigma$ passed to $\alpha\upsilon\sigma\text{-}\alpha\upsilon\tau\acute{\alpha}\varsigma$.

ὅς.

The relative $\acute{o}\varsigma$, Sk. $y\acute{a}\varsigma$, I.-E. $\acute{y}os$, has nothing noticeable in its inflexion.

Interrogatives.

The I.-E. stem $qo-$ appears as $\pi o-$ in $\pi\omicron\iota$, $\pi\omicron\upsilon$, $\pi\acute{\omega}\varsigma$, $\pi\acute{o}\tau\epsilon\rho\omicron\varsigma$, $\pi\acute{o}\sigma\omicron\varsigma$.

The I.-E. $qe-$, Sanskrit $k\acute{a}$ -, Latin $quo\text{-}d$, appears as $\acute{\tau}\epsilon$ - in Ionic $\acute{\tau}\epsilon\omicron$, $\acute{\tau}\epsilon\phi$, $\acute{\tau}\epsilon\omega\nu$, $\acute{\tau}\epsilon\omicron\iota\sigma\iota$, Attic $\tau\omicron\upsilon$, $\tau\acute{\omega}$, $\tau\omicron\iota\sigma\iota$. In Hesychius we find $\acute{\tau}\epsilon\iota\omicron\nu\ \pi\omicron\iota\omicron\nu$. Κρήτες .

In the Ionic dialect $\pi o-$ is represented by $\kappa o-$ (cf. p. 126).

The ϵ of $\acute{\tau}\epsilon\omega\nu$, $\acute{\tau}\epsilon\omicron\iota\sigma\iota$, etc., has not sprung from $\tau\acute{\iota}$ -, as can be seen by comparing $\acute{\alpha}\sigma\sigma\alpha$, $\acute{\alpha}\tau\tau\alpha$ (where $\sigma\sigma$, $\tau\tau$, represents $-\tau\acute{\iota}$ -) with the forms $\acute{o}\tau\tau\epsilon\omicron$, $\acute{o}\tau\epsilon\omicron$, etc.

With $\acute{\tau}\epsilon\omicron$ we can compare the forms $\acute{\epsilon}\mu\epsilon\iota\omicron$, $\acute{\epsilon}\mu\acute{\epsilon}\omicron$. To Gk. $\tau\epsilon$ - answers Lat. que -; to Gk. $\pi o-$ answers Lat. quo ; while to Gk. $\pi\eta$, $\pi\eta$ answers Lat. qua - of the fem.

The composite δ - $\pi\sigma$ - and δ - $\kappa\sigma$ - are to be found only in isolated $\iota\pi\sigma$ -forms, e. g. $\delta\pi\sigma\upsilon$, $\delta\pi\sigma\omega\varsigma$. If these are derived from $\delta\sigma$ - $\pi\sigma$ -s the first component is undeclined.

The demonstrative $\delta\epsilon\iota\nu\alpha$, used by Plato, Demosthenes, and $\delta\epsilon\iota\nu\alpha$. the later Attic writers generally, is to be connected either with the $-\delta\epsilon$ of δ - $\delta\epsilon$, etc. or the $\delta\epsilon$ - which appears in $\delta\epsilon\upsilon\rho\sigma$, $\delta\epsilon\upsilon\tau\epsilon$.

Gk. $\tau\acute{\iota}\varsigma$, interrogative as well as indefinite (cf. p. 264), Lat. $\tau\acute{\iota}\varsigma$. *quis*, has in the Greek inflexion a nasal which does not appear elsewhere. The stem $\tau\iota$ - is to be found in Ion. $\acute{\alpha}\sigma\sigma\alpha$, Att. $\acute{\alpha}\tau\tau\alpha$. Original $\tau\iota\alpha$, passed to $\sigma\sigma\alpha$, $\tau\tau\alpha$, and the prefixed α is due to the fact that $\sigma\sigma\alpha$, $\tau\tau\alpha$ occur only after neuter plurals ending in α , e. g. Ar. *Ran.* 172 $\acute{\rho}\acute{o}\sigma'$ $\acute{\alpha}\tau\tau\alpha$; for $\acute{\rho}\acute{o}\sigma\alpha$ $\tau\tau\alpha$;

The stem $\tau\iota$ - also appears in the dat. pl. $\tau\iota\sigma\iota$. The ν of the other cases was probably extended from the acc. sing. $\tau\iota\nu\alpha$. The regular accusative would be $\tau\iota\nu$, but just as $Z\eta\nu\alpha$ with a doubled accusative ending rose out of $Z\eta\nu$ and led to a new formation $Z\eta\nu\acute{o}\varsigma$, so out of $\tau\iota\nu$ came $\tau\iota\nu\alpha$, and led to the inflexions $\tau\iota\nu\sigma$, $\tau\iota\nu\iota$, etc.

The adjectival $\acute{\rho}\acute{o}\sigma\sigma\sigma$, $\acute{\rho}\acute{o}\sigma\sigma\sigma$, and $\delta\sigma\sigma\sigma$ answer to indeclinable $\tau\acute{\iota}\sigma\sigma\sigma$, etc. words in Sanskrit and in Latin. Thus $\acute{\rho}\acute{o}\sigma\sigma\sigma$, Lat. *tot*, Sk. *túti*; $\acute{\rho}\acute{o}\sigma\sigma\sigma$, Lat. *quot*, Sk. *kúti*; $\delta\sigma\sigma\sigma$, Sk. *yúti*. They have probably been formed from indeclinable words, which have now disappeared in Greek, by the addition of the suffix $-\kappa\sigma$.

As pronominal in origin we must regard the adverbial Suffixes. suffixes $-\theta\epsilon\nu$, $-\theta\iota$, $-\theta\alpha$, $-\kappa\iota$. To $-\theta\epsilon\nu$, as in $\alpha\iota\nu\acute{o}\theta\epsilon\nu$ *alw̄s*, and $-\theta\iota$, as in $\eta\acute{\omega}\theta\iota$ *pró*, we can find no parallel in the cognate languages. With $-\kappa\iota$, as in $\sigma\acute{\upsilon}\kappa\acute{\iota}$, $\pi\omicron\lambda\lambda\acute{\alpha}\kappa\iota$, we can compare A.-S. *hit*, the neuter of *he*.

The stems of the Latin personal pronouns are *me-*, *tue-*, *se-*, Pronominal De-
nŏ(s)-, *ŕŏ(s)-*. clension
in Latin.

1st Person, *egŏ*, orig. *egŏ* for **egŏn*; cf. $\epsilon\gamma\acute{\omega}\nu$, Sk. *aham*.

2nd Person, *tŭ*. The long vowel, which also appears in Personal Pronouns.
Hom. $\tau\acute{\upsilon}-\nu\eta$, represents the accented form of the reduced root, Nom. Sing.
or else is due to its being monosyllabic (p. 146).

The Gen. Sing. *mis*, *tis*, (*sis*) are enclitic forms (Neue, ii. 178), Gen. Sing.

as compared with $\epsilon\mu\text{-}\acute{o}\upsilon$, which contains the original root vowel. They are apparently later formations with the $-s$ of the gen. of the substantival declension, and to be compared with the forms $\epsilon\mu\acute{\epsilon}\acute{o}\varsigma$, $\epsilon\mu\epsilon\upsilon\varsigma$, $\epsilon\mu\acute{o}\upsilon\varsigma$, beside $\epsilon\mu\acute{\epsilon}\acute{o}$ (*K. Z.* xxvii. 414). The ordinary gen. *mei*, *tui*, *sui*, like *nostri*, *vestri*, are genitives of the possessive adjectives, a substitution which also appears in Old Irish and Lithuanian; cf. also $\tau\epsilon\acute{o}\iota\omicron$ (*Θ.* 37. 468, etc.).

Dative
Sing.

Dat. Sing. *mi* (*me* in Ennius, according to Fest. 161; but v. Neue, ii. 180, sq.) seems to be an enclitic form, Sk. *me*, Gk. $\mu\omicron\iota$, but may as well be a contraction for *mihi* as *nil* for *nihil*. On the ordinary forms *mihi*, *tibi*, *sibi* (also written *mihei*, *mihe*, *sibei*, *sibe*, etc.), cf. p. 342.

Acc. Sing.

Acc. Sing. $\acute{m}\acute{e}$, $\acute{t}\acute{e}$, Sk. $\acute{m}\bar{a}$, $\acute{t}\bar{v}\bar{a}$, lengthened as monosyllables; $\acute{m}\acute{e}$ is enclitic (cf. $\mu\epsilon$) as contrasted with $\epsilon\mu\text{-}\acute{\epsilon}$. The termination $-l$ found in the accusative in Old Latin is due to a confusion with the ablative (*Z. G. d. P.* 128). The form *mehe*, quoted by Quint. i. 5. 21, is noticeable.

Abl. Sing.

Abl. Sing. $\acute{m}\acute{e}\text{-}(d)$, $\acute{t}\acute{e}\text{-}(d)$, Sk. $\acute{m}\acute{a}t$, $\acute{t}\acute{r}\acute{a}t$. *Se-d* has become a preposition (*sed fraude* in Inscr., *sed-itis*, etc.) or conjunction. *Sine* may be for $\ast\acute{s}edue$. It is true we should have expected $\ast\acute{s}\acute{e}ne$ (as $\acute{c}ac\acute{u}men$ = Sk. $\acute{k}ak\acute{u}d\acute{m}ant$), but as a preposition it would be unaccented (p. 279) and the vowel shortened.

Nom. and
Acc. Plur.

Nom. Acc. Plur. $\acute{n}\acute{o}\varsigma$, $\acute{v}\acute{o}\varsigma$, Sk. $\acute{n}as$, $\acute{v}as$; $\epsilon\text{-}\acute{n}\acute{o}\varsigma$ (*Carm. Arv.*) may be explained as $\epsilon\text{-}\acute{q}u\acute{i}dem$, $\epsilon\text{-}\acute{n}im$ ($\acute{n}am$), or even as $\acute{\epsilon}\text{-}\mu\acute{\epsilon}$, if ϵ is not radical but on the analogy of $\acute{\epsilon}\text{-}\gamma\acute{\omega}$.

Gen. Plur.

Gen. Plur. *nostrum*, *vestrum* are used partitively, otherwise *nostri*, *vestri*. *Nostrum*, etc., shows the gen. in $-om$; the fuller form is seen in *maxima pars vostrorum* (Plaut. *Most.* 280); *neutram vostrarum* (Slich. 141), etc. (*K. Z.* xxvii. 403; Neue, ii. 185; Bücheler, p. 89); cf. *di quorum est potestas nostrorum*, in a formula of prayer in Liv. 8. 9. 6. In classical times *nostrum*, *vestrum* became substantival, *nostrorum*, *vestrorum* adjectival, but *suorum* remained substantival owing to the ambiguity of *suum*.

Dat. Abl. Plur.—For $\acute{n}\acute{o}bis$, $\acute{v}\acute{o}bis$ cf. p. 342. Paul. Fest. 47. quotes a form *nīs* (for $\ast no\text{-}is$, cf. $\acute{v}\acute{\omega}i$).

Meus, tuus, suus, for *meios, teuos, seuos*, correspond to *ἐμέο, τοέος, ἐός*. But it is probable that there originally existed two distinct forms: an accented form *teuos, seuos*, whence *τεός, ἐός, tuus* (older *toros*), *suus* (older *sovos*): and an enclitic form *tuos, suos*, whence *σός, ὄς*. Old Lat. has *sos, sas, sis* (Lucr. 3. 1025, Neue, ii. 189), also *sa-psa, sua-d* (= *sic*, Fest. 351); *si, nisi, sic* (= *sei-ce*) are locatives or datives. *Si* (Oscan *srai*) represents the unaccented form of a proclitic; under the accent it would become *svæ* or *sæ* (p. 79).

For the termination in *nos-ter, ves-ter* cf. *ἡμέ-τερ-os, ὑμέ-τερ-os*.

The stem *to-* appears in *ta-m* (older *tame*, Fest. 360), *tum*, Demonstrative for *ta-sme, tu-sme*; cf. Umbr. *pu-sme*: also in *topper* (**tod-per*), *is-lus, is-la, is-tud, to-t, tan-lus, ta-lis*, etc. Pronouns.

The stem *i-* appears in *i-s, i-d*, old acc. *im, i-um, emem* (Paul. Fest. 76), *ipse* for *is-pte* (cf. *meo-pte*), *is-te, is-ta, is-tud, i-bi, i-ta, i-tem, i-terum*. The strong stem is *eī* in *e(i)a*, etc., Sk. *aya*; the dat. *eiei* may be formed on the analogy of *emem*: it also appears as *iei, eei, ēi, ěi* (Neue, ii. 192).

The last syllable in *em-em* (Sk. *imam*) may represent an old enclitic *-em* or *-om*, appearing in Sk. *il-am*, Lat. *il-em, quid-em, donic'-um, ecc'-um, ned-um*. Then as *ned-um* was divided *ne-dum*, and gave rise to *vix-dum, age-dum*, etc., so *il-em* was the origin of *ī-dem, is-dem* (K. Z. xxvii. 175). Cf. *-am* in *i-am, perper-am*.

Stem *ho-* appears in *ho-i-ce* (*hic*), *ho-rsum, ho-die, hī-bus* (on the model of *quibus, ibus*), *ha-c, ho-c, hu-c*, etc.

We have the stem *olo-* in *olo-es* (Paul. Fest. 19), *ul-tra, ul-s*, Old Lat. *ollus, olla, ōlim*. Later we get *illo*, with a nom. *ille*, on analogy of *iste, ipse*, etc.

We may add *alio-* (*ἄλλος*), with a simple root *al-* in *al-ter*, and also a root *es-* in *nec-erim* (= *eum*, Fest. 162), which is also found in Oscan and Umbrian.

Stem *qi-* in *qui-s, qui-d, qui-bus, qui-a* (instr., cf. Sk. *kāyā*). Interrogative and Indefinite Pronouns. Osc. *pis*, Gk. *τίς, τί(τ)*. *Quis* is also fem. in Old Lat. (Neue, ii. 219, 222).

Stem *ge-* in *ques* (plur. nom., Neue, ii. 232); also seen in *cottidie, cujus* for **quettidie, *queius (quoius)* with *-ue-* changing to *-uo-*; cf. Gk. *τέο*.

Stem *go-* in *quo-m, qua-m* (for *qua-sme*, v. *tum*, supra), *quei* or *quī* (loc.), *quot, quotus* (Sk. *kāti, katithā*), *qualis*.

It is difficult to separate *uter* from *nótepos*, Osc. *púlúrús*; but the loss of the guttural is very strange. Compare however, *ne-cubi, ali-cubi, ne-cunde, si-cubi*, beside *unde, ubi* (**πο-φι*).

Inflexion of Pronouns. The principal terminations in pronominal inflexion seem to be as follows:—

	Masc.	Fem.	Neut.
Sing. Nom.	-i	-i	-d.
Gen.	-ius.		
Dat.	-ei.		
Loc.	-i.		
Plur. Nom.	-i	-i.	
Gen.	-um.		

The characteristic endings, as distinct from the nominal declension, are—

Nom. sing. masc. and fem. in *-i* *ho-i-ce (hic), qu-i, qua-i (quae)*.

Nom. neut. in *-d* *qui-d, quo-d, *ho-d-ce (hōc)*.

Gen. Sing. in *-ius*, which seems to be a combination of *i* of nom. with *-us* of gen. in *Cererus*.

In the case of polysyllabic stems this termination contracts with the last vowel of the stem to *-īus* (**illo-i-us = illīus*). But this long *i* is shortened in hiatus, almost always in *alterīus, utrīus*, is doubtful in *illīus, ipsīus, istīus, nullīus, totīus, unīus*, though always long in *aliūs* (as here the nom. would otherwise be identical). *solīus* perhaps occurs in Ter. *Haut.* i. i. 77 (Neue, ii. 214).

Nom. Plur. in *-i* (like *O-* and *A-*declension), *hi (ho-i), quae*, etc. Forms like *eīs, ieīs, heīs* are analogical.

Gen. Plur. in *-um, horum, harum*, with a preceding long vowel, possibly on analogy of fem. (*hōrum*, not **hōrum* from

hā-rum). But *-um* for *-orum* is found in *eum* (Paul. *Fest.* 77), *quium* (Cato, in *Serv. ad Aen.* 1. 95), *cuium*.

The dative plurals *hībus*, *ībus* seem to be analogical formations for *hīs*, on the analogy of *quībus*.

Cui is a loc.=*quoi*; cf. *hu-i-c* (**ho-i-ce*).

In the case of *quōius*, *quōiei* (*C. I. L.* 1. 34), the ordinary terminations of gen. and dat. *-us*, *-ei* seem to be added to the nominative stem.

On the analogy of the *O*- and *A*-declension we find genitives *isti*, *ali*, *illi*, *toti*, *neutri*, *utrar*, *unae*, *ullae*, *totae* (Bücheler, p. 78), and datives *toto*, *illo*, *isto*, *ipso*, *alio*, *illae*, *solae*, *alterae* (ib. p. 114; Neue, ii. 253 sq.).

CHAPTER XIV.

THE COMPARISON OF ADJECTIVES.—THE NUMERALS.

The Com-
parison of
Adjectives
in Greek.

Of the primary suffixes *-ιον-*, *-ιστο-*, we have already seen (p. 310) that the suffix *-ιον-* is properly to be classed among the *s*-stems.

There was originally a variation of the root vowel between stems with the termination *-ιον-* and those with the termination *-ιστο-*, e. g. *κρέσσω* (Attic *κρείττω*) *κράτιστος*, *δλείζων* *δλίγιστος*. But in Sanskrit the accent remains on the root both in the comparative and superlative, and the root appears in both cases in the full degree, e. g. *urú-* (broad), *váriyas*, *váriṣṭha*. Nor in Greek do we find any trace of the shifting of the accent from the root syllable to the suffix, such as we should have expected to accompany a variation in the root vowel.

In the majority of cases the strong stem has disappeared from the comparative under the influence of the analogy of the positive and superlative, but we often find a quantitative in place of the original qualitative Ablaut.

E. g. *ἐλαχύς* *ἐλάσσων* for **ἐλεγχίων*, *ἐλάχιστος*.
ταχύς *θάσσων* (**θαγχίων* for *θεγχίων*) *τάχιστος*.
μάλα *μᾶλλον* (for **μελιον*) *μάλιστα*.

The strong root is seen in *μέλει*, *μέλομαι*, Lat. *melius*.

Abstract Substantives in *-εσ-* mostly have the same vocalisation in the root as the comparative and the superlative when of the full degree, e. g.—

μήκος : *μήκιστος*, but *μακρός*.

κάρτος (for **κρετος* ?) : *κρέσσω*, but *κρατύς*.

θέρσος (Aeol.), *Ἀλιθέρης*, *Θερσίτης*, but *θρασύς*.

νη-μερτής, but *ἁμαρτάνω*.

ἐν-δελεχής, but *δολιχός*.

βένθος : *βαθίων* (poet. for **βενθίων*), but *βαθύς*.

In Greek the *ι* of the comparative suffix is both long (*-ίων*,

-μων) and short (-ϊων) (cf. p. 96); thus αἰσχιών, ἐχθίων, but ἥσσω (ἡκ-ϊων), and Old Attic δλείζων (δλειγῶν). Instances of -ων are κακ-ίων, κέρδ-ιον, ῥίγ-ιον, κάλλ-ιον, ἄλγ-ιον, φιλ-ίων, βέλτ-ιον: of -κων πάσσων (παχ-), βράσσων, χεῖρων, χερείων, (cf. χέρηι), ἀρε-ίων (cf. ἀρε-τή), etc.

Secondary suffixes of comparison are -τερο-, Sk. -tara-, and Secondary
-τατο-. suffixes.

The suffixes -το, -ατο are found in the ordinals, e. g. τρί-τος, with a superlative meaning in πύμ-ατος, ὑπ-ατος, ἔσχ-ατος, and combined with the ordinal suffix in τρί-τ-ατος, ἐβδόμ-ατος. Of these the suffix -ατο- is explained by Ascoli (*Curt. Stud.* ix. 339 sqq.) as due to the analogy of the ordinals τέτρα-τος, ἑνα-τος, δέκα-τος, where the α (in the last two cases = η) is part of the stem. The superlative suffix -τατο- is a Greek formation and is a combination of the two suffixes -το- and -ατο- (Monro, *H. G.* § 121).

An accumulation of the suffixes of comparison is to be seen in ἐν-έρ-τερ-ος, ὑπ-έρ-τερ-ος, χερ-ειό-τερ-ος (cf. Lat. *inf-er-ior*).

In ἑκαστος the termination may be -στο-, as in πό-στος, just as ἐκά-τερος is parallel to πό-τερος: or else the word is to be divided ἑκασ-τος, like ἐκασ-τέρω (η. 321), which is related to ἐκά-τερος as ἔκτοσ-θεν to ἔκτο-θεν. The origin of ἑκαστος is then to be seen in ἐκάς, Lat. *secus*, for σφε-κας, and hence ἑκαστος means 'each for himself.' The suffix -κας is to be found in ἀνδρα-κάς (ν. 14), ἐγ-κάς, an adverb used by Galen and Hippocrates (the plural is seen in Hom. ἐγκατα), and also in ἀγ-κάς (from ἀνά, ἄν) and ἄγκαθεν (Aesch. *Ag.* 3), which popular etymology connected with ἀγκών. In Aesch. *Cho.* 427 we find ἀν-έκα-θεν.

The suffixes -τερο-, -τατο- are added either to the stem, as in ὠμό-τερος, ἀληθέσ-τατος, or to case forms, as in παλαι-τερος, μυχοί-τατος, σοφώ-τατος. The difference between -ωτερος, -ωτατος, and -οτερος, -οτατος, though perhaps eventually depending merely on rhythmical considerations, is regarded by Brugmann (*M. U.* iii. 78) as original, those with a long vowel coming from the cases (abl. or instr.) in -ω, e. g. προσω-τέρω, κατω-τάτω. Other instances of the addition of the com-

parative suffixes to case forms are *μεγαλ-τερος*, *ἡσυχάλ-τερος*, *φιλαλ-τερος*, *πεγαλ-τερος*, the latter being parallel to Lat. *prae-ter*.

Other suffixes of comparison are to be seen in *ἐν-εροι* (cf. Lat. *inf-erus*, *sup-erus*), and *πρό-μος* (cf. *pri-mus*, *ulti-mus*).

Compara-
son of Ad-
jectives in
Latin.

Compara-
tive.

The formation of the Latin comparative in *-ior* has been discussed above (p. 311). The form *minor*, *minus* does not properly belong here, as *minor* cannot stand for **minior*. Rather we must accept Stolz's suggestion (*Hdbuch*. p. 219) that there was an old substantive *minus*, **mineris*, which survives in *minis-ter*, *miner-rimus* (Paul. *Fest.* 122). The form *minimus* points to a comparative **minior*, the original genitive of which (**minieris*) would become **mineris*, and so be identical with the gen. of *minus*, which therefore came to be regarded as the neuter of a comparative, and from this again was formed a masc. *minor*.

The suffix *-tero*, which is common in Greek, does not appear as a comparative suffix in Latin, but is seen in *ex-terus*, *posterus*, *al-ter*, *vester*, *noster* (cf. *ἡμέ-τερος*, etc.), and apparently in *magis-ter*, *minis-ter*¹.

In *inferior*, *superior* we have a double suffix; the true comparatives are *inferus*, *superus* (cf. Sk. *úpara*, etc.), of which the superlatives are (*infi-mus*), *summus* (**sup-mus*).

Superla-
tive.

Suffix *-mo* in *sum-mus*, *mini-mus*, (*infirmus*?), *i-mus*, *pri-mus*, *puri-me* (= *purissime*, Paul. *Fest.* 252; Neue, ii. 106), *extremus* (formed from **ext(e)re*, adv. of *exterus*), *postre-mus*, *supre-mus*, *bru-ma* (*brevi-ma*), etc.

The formation of *pessimus* is doubtful.

Plurimus seems formed from the comparative stem. We find the various forms *ploerime*, *plusima* and *plisima* (Neue, ii. 115, from Varro and Festus).

Suffixes *-timo*, *-tumo* in *ex-timus*, *ci-timus*, *pos-tumus*², *ul-timus*

¹ Henry (*Mém. Soc. Ling.* vi. 93) has remarked that the comparative suffix is appropriate where there are only two correlative terms (*noster*, *vester*, *ἡμέτερος*, *ὁμέτερος*), but inappropriate to a third term *σφέτερος*. This word has however nothing corresponding to it in Latin, and probably the stem *σφε-* was not originally pronominal in Greek (*K. Z.* xxviii. 140).

² There was apparently an old word *pos*, which has its correlatives in

(cf. *uls*). Compare also *op-timus*, *sollis-timus*, *sinis-timus*, *dex-timus*, the adjectives *fini-timus*, *legi-timus*, etc., and the ordinals like *vicēsimus* (*vikṣt-timus*).

A suffix *-simus* also appears in *maximus*, *proximus*, *medioximus*, *facillimus* (for **facil-simus*), *veterrimus* (for *vetersimus*), etc. This suffix can hardly be derived, with Stolz, from the one instance of *plusimus* before the *s* became *r*, the suffix being taken as *-simus*, but is apparently a primitive Italian form, standing side by side with *-mus* and *-timus*. The ordinary explanation given—e. g. *M. U.* iii. 135, *Z. G. d. P.* 530—is that the termination is extended by analogy from the ordinals, where e. g. *vikṣt-timus* = *vicensimus*, *vicesimus* (cf. p. 207). In any case the *-ss-* cannot come from *-st-* (cf. p. 207), and all direct comparison with Greek *-ιστος* is out of the question. But both in Greek and Latin the *-ισ-*, *-is-* of the superlative (*κάκ-ισ-τος*, *cert-is-simus*) represent the reduced form of the comparative suffix *-ισσ-*, *-ισσ-*.

In the numerals we naturally expect to find the influence The Numerals. of association and analogy very powerful. It is true that, as the numerals are mostly indeclinable, the influence of a system of inflexion cannot be felt; but nevertheless the various numbers in a series stand in such close relationship to one another and to the corresponding numbers in parallel series, that each word almost necessarily affects the related forms. The subject has been treated by Baunack in *K. Z.* xxv. 225. A few of his instances are given here.

In Greek *ὀκτάκις*, *ἐξάκις*, *πεντάκις*, *εἰκοσάκις* are modelled on *ἐπτάκις*, *ἐνάκις*, where the *a* is radical, and hence come *πολλάκις*, *ὄσσ-άκις*, etc. *ἑπτα-χα* produces *πέντ-αχα*, *ἐξ-αχῆ*, and then *ἀλλ-αχοῦ*, *ἐκαστ-αχοῦ*, etc. In Latin, *octussis* (*Hor. Sat.* 2. 3. 156) for *octo-assis* produces *quadrussis*, *centussis*; *vig-essis* produces *tri-gessis*; *duplex*, *du-plus* give *quadru-plex*,

Sanskrit and Zend, and appears in *pos columnam*, etc., on inscriptions, also in *posmeridianas*, *pomerium*, etc. (*Neue*, ii. 736, 805.) This will be related to *po-* in *po-lio*, etc., as *eis* (*ēvs*) to *ēv*, *ἀμφίς* to *ἀμφί*, *ἐξ* to *ἐκ*, *abs* to *ab*, **subs* (*sus-que deque*, *sus-cipio*, etc.), to *sub*, **obs* (*os-tendo*) to *ob*. *Post*, old Latin *poste*, will be formed on the analogy of its opposite *ante*.

centu-plus, *decu-plus*, whence in late Latin *noncuplus*. In the distributives *se-ni* (for *ses-ni*, cf. *ses-centi*) is the origin of *se-* in *se-vir*, *se-digitus*, *se-mestris*, *se-decim*, *se-jugis*, and in its own series of *sept-eni*, *nov-eni*, and even perhaps of *dēni* (which can hardly be for *dēc-ni*); so *viceni*, *nonageni*, *ducenti* (*ducenteni* is later). So too *dec-unx* gave the model for *ses-cunx*; *quadri-ennium*, *quadri-duum* are due to *tri-duum*, and *bīga* (*biīga*) gave rise to *quadrīga*. Festus, 177, quotes *ningulus*, which is evidently formed from *singuli*, as *nullus* from *ullus*¹.

Cardinal
Numbers.

One. Stem *som-*, *sem-*, *sm-*, *sm-*.

Greek *ὁμ-ός*, *ὁμ-οιος*, *ὁμ-αλος* and *εἷς*, *μία*, *ἓν* for **σεμς*, **σμ-ια*, **σεμ*. For the change from *μ* to *ν* cf. *χθών* : *χθαμ-αλός*, *χιών* : *χιεμς* (p. 305). The weak stem appears in *ἄ-παξ*, *ἄ-πλοῦς*, *ἅμα* (*sm-m-a*), *ἄ-λοχος*, etc. Latin *sem-el*, *sim-ul* (*semol*, *sm!*), *sim-plex*, *sin-guli*.

Stem *oino-*, Greek *οἶνη*, Lat. *oino(m)*, *oinvorsei* (Inscr.); *oi* then regularly passes to *oe* and *ū* in *ūnus*, but *noenum* (= *ne-oinom*) contracts to *non*.

The Homeric *ia* and *iῶ* are of doubtful origin, and are usually nearly synonymous with *isos*, *ὁμοιος* or *ὁ αὐτός*, e. g. Δ. 437 *ὁμός θρόος οὐδ' ἰα γῆρυς*. I. 319 *ἐν δὲ ἰῆ τμήν ἡμὲν κακὸς ἦδὲ καὶ ἐσθλός*.

The Latin *perendie* cannot contain either *oino-* or *sem-*, and the old derivation '*per unum diem*' must be given up. Possibly *peren* = *pern*, cf. Greek *παρά* (*prn-*).

Two. Indo-European masc. *dmō* (before consonants), *dmōm* (before vowels), fem. and neut. *dmoi* (K. Z. xxviii. 234), Greek *δύω*, Attic *δύο*, Latin *duō*. In the Veda we have *durá*, in class. Sanskrit *dvá* (cf. *δώδεκα* = *δfω-δεκα*).

¹ In the Romance languages the principle of analogy in the numerals is carried still further. Cf. Ital. *ottuagesimo* (*octuaginta*, Columella, Vitruv., Plin.) from *septuagesimus*, *quinterno*, *sesterno* from *terno*; Old French *octembre* from *septembre*, etc. So French *dizaine*, *douzaine*, *quinzaine* point to a fem. sing. **decena* (cf. *terdeno bore* Sil. Ital. 15. 259) and *huitaine* to **octena*. So in the Heracleian tables we find *ὀκτώ*, *ἐννία*, where the aspirate is due to *ξξ*, *ἑννά*. Similar instances of the reciprocal attraction of pairs of words are seen in late Latin *meridionalis* (due to *septentrionalis*) *senester* (cf. *dexter*), Ital. *grece*, pointing to **grevis* for *gravis*, like *levis*.

Homer uses *δύω* and *δύο*, Attic and the *κοινή* only *δύο*, but the relation between the two is unexplained. In Homer the word is indeclinable, and can be so also in Attic. When declined the Attic genitive and dative is *δυῶν*, but in later Attic and the *κοινή* also *δυέων* (cf. *οἴκοι* : *οἴκει*, p. 318). Herodotus has the plural forms *δυῶν*, *δυοῖσι*, and dialectically we find *δύε*, *δυσί*, *δύας*.

Three. Indo-European *trei-* *tri-* Sanskrit *tráyas*, Homeric and Attic *τρεις*, Aeolic *τρῆς* (from *τρεῖες*), Latin *trēs* (*treies*), *tri-a*. The form *τρεις* was also used for the accusative in place of the more regular **τριws*, (**τρῖς*). The neuter *τρία* (Sanskrit *trīṇi*) appears with the last vowel long in *τριάκοντα* (cf. *διακύσιοι*) see p. 372.

Four. Indo-European *qetwōres*, *qtur-* Sanskrit *catvāras*, Greek *τέτταρες* and *τέτορες* (Doric), early Attic *τέσσαρες*, Ionic *τέσσερες*, Homeric *τέσσαρες* and *πλούρες*. The stem *τετρα-* appears in Homeric *τέτρα-τος*, Attic *τέταρ-τος*. The weakest form of the stem is seen in Sanskrit *tur-īyas* (for **ktur-īyas*), which, as the *k* is velar, must appear in Greek as *πτυ-* or *πτυρ-* in *πτυ-φάλεια* for *πτυ-φαλεια*, cf. *τρά-πεζα* for *πτφγ-πεζα*.

In Latin the *a* of *quatuor* is a difficulty, as we should expect **quetuor*, but it may come from *quartus* (*qtuṛtós*, cf. Sanskrit (*k*)*turīya*). *quadr-* seems to correspond to the Greek *τετρα-*, Sanskrit *catur-*, Indo-European *qtur-*, with the first syllable restored in Greek on the analogy of the strong form. But the *d* in Latin is unexplained.

Five. Indo-European *penqe*, Sanskrit *pāñca*, Greek *πέντε*, Latin *quinque* (for **penque*, p. 221); *πέμπτos*, *quin(c)tus* (cf. *Quinctius*) are regular. The Lesbian *πέμπε* is for *πέντε* on the analogy of *πέμπτos*, cf. *πεμπάς* (-ης), *πεμπάω* (δ. 412). *πεντήκοντα*, but *πεντᾶκόσιοι*.

Six. Indo-European *sheks*, Sanskrit *ṣás*, Doric *ῥέξ*, Attic *ἕξ*, Latin *sex*. The Cymr. *chwech* and Doric *ῥέξ* point to an original initial *sh*.

Seven. Indo-European *septm*, Sanskrit *saptá*, Greek *ἑπτá*, Latin *septem*. The Hindu grammarians give the base as

B b

saptan-, as in *navan*, *daçan-*, but we have already seen (p. 110) that the base should rather end in the labial nasal.

Eight. Indo-European *oktō(u)*, Sanskrit *aṣṭā*, *aṣṭāu*, Greek *οκτώ*, Latin *octo*. These forms are dual (cf. *δύ-ω*, *amb-o*, *λόγ-ω*).

Nine. Indo-European *neun̥*, Sanskrit *nāva*, Greek *ἐννέα*, with ordinal *ἐνατος*, and in Homer also *ἐννατος*, *ἐννήκοντα* (τ. 174), but also *ἐνενήκοντα*, as in Attic. The Sanskrit *nāva*, Latin *novem*, point rather to a Greek **ἐνfa*, which we find in the *ἐνf-*, *ἐνν-* of *ἐννάκις*, *ἐννήκοντα* (cf. *ξενφος*, Ionic *ξείνος*, Att. *ξένος*, p. 184). *ἐννέα*, with the *νν* of *ἐνf-*, seems to stand for *ἐνεff̥n̥*, becoming *ἐννεff̥n̥*, *ἐννέα*.

Ten. Indo-European *dekm̥*, Sanskrit *dāça*, Greek *δέκα*, Latin *decem*; Latin *undecim* for *úno-decem*, *únidecem*; cf. *unde-viginti*; so with the other numerals to 'twenty.'

Twenty. Sanskrit *vinçatí*, Greek *εἴκοσι* (Attic and Ionic), *ἑκατὶ* (Doric). *ἑκατὶ* = *ἑκατρί* cf. Boeot. ordinal *ἑκαστῇ*, Latin *vicēsimus* (*vik̥t-timus*). The *o* of *εἴκοσι* seems to come from *εἰκοστός*, which in its turn is on the analogy of *τριᾶκοστός* for **τριακονστος* (cf. *ἐκατόν* : *διακόσιοι*). The *ει-* of Greek, *vi-* of Latin, are unexplained.

The Latin *viginti* is for *vi-k̥t-i*, *k* becoming *g* before *n* (p. 216). In form it may be a dual, answering to the plural termination of *triginta*. In any case it has formed the model of the following multiples of ten; cf. *triginta*, but *τριᾶκοντα*.

Higher
Latin
Numerals.

Octoginta. The older form may be *octuaginta* (Vitruv., Colum., Plin.) for **octovaginta*, which corresponds to *ὀγδοήκοντα*, in which case *octoginta* will be a later form and *septuaginta* a formation by analogy.

Nonaginta (= **novenaginta*, *nevenaginta*) cf. *ἐν(ν)ενήκοντα*. All these forms are probably originally neuter plurals, and keep the original long *a* of that form (p. 219), owing perhaps to the fact that such phrases as *triginta viri* soon caused their gender to be forgotten.

Hundred. Indo-European *h̥ntó-m*, Sanskrit *çatám*, Greek *ἐ-κατόν*, Latin *centum*. The *ἐ-* in Greek is unexplained. As *k* becomes *g* between two sonants in Latin, *septingenti* is for

septēkēti, and this gives rise to the forms *quingenti*, *quadringenti*, and even *octingenti*, *noningenti* (Columella). Beside the Greek διακόσιοι, etc., the Sk. termination is -*ṣatyā*, best represented by Doric -κάτιοι, Arcad. -κάσιοι. The *o* of the Attic -κόσιοι is due to the analogy of -κοντα.

Gk. χίλιοι, cf. Homeric ἐννεά-χῖλοι, δεκά-χῖλοι. The original ^{Thousand.} stem was χεσλο- (Doric χήλιοι), Sanskrit *sa-hásra*, Indo-European *ghesro-*.

Mille, *milia* is obscure: perhaps it may be the same as *μύριοι*, with *u* becoming *i* before *li* (cf. p. 71, and compare ὕλη : *silva*).

Greek πρῶτος, Doric πρᾶτος, is either for **pro-atos*, a super- Ordinals, lative of πρότερος, or a superlative of *πρωF-os* (*ῥ*), answering to Distributives, etc. Sanskrit *pūrvas*, as τρίτατος is a superlative of τρίτος. *πρώην* In Greek. will then be for **πρωFιᾶν* (*πῥFιᾶν*), Doric πρᾶν.

δεύτερος, if for *δFετερος*, we should expect to be **δετερος* (cf. *δFώδεκα*). In Homer we have *δεύτερος* in the sense not of 'second' but 'last' of a number, e.g. *δεύτερος ἦλθεν ἀναξ ἀνδρῶν Ἀγαμέμνων* (T. 51), cf. *οἷ κεν ἐμείο δεύτεροι ἐν νήεσσι—λίπησθε* (Ψ. 248), where *δεύτεροι* means 'after me.' The old grammarians derived the word, probably rightly, from the root of *δεύομαι*, the notion of separation passing into that of sequence (*K. Z.* xxv. 298). Similarly *secundus* is from the root *seq* in *sequor*.

In compounds *δυ-* appears as *δι-* (*δFι-*), Sanskrit *dvi-*, as in *διᾱκόσιοι* (formed like *τριᾱκόσιοι*), cf. *δίσ*.

ἕκτος compared with *sextus*, Anglo-Saxon *sixta*, points to an original *σFεκστος*.

In *ἑβδομος*, *δγδόφος* we have an unexplained change from the *tenuis* to the *mediae*. *δγδόφος* compared with *octāvus* stands for *δγδωφος* with the long vowel shortened in the hiatus (p. 183). The stem is *oktūF-* before the following vowel (p. 368).

δέκατος is formed like *τρίτος*, as compared with Sanskrit *daśamā*, Latin *decimus*.

Latin *singuli* = *ση-k'λό-*, *k* becoming *g* between sonants (p. In Latin. 219).

bini=*duoinoi* (Old High German *zwein-zug*, Old Saxon *zwene*, English *twain*), so *bis*=*duis*, cf. *bimus* beside *dimus* (p. 211).

All other distributives are formed with the termination *-no*, but with assimilation to one another, e.g. *trini* (also *terni*), *quini* on the analogy of *bini*; *septēni*, and generally the succeeding forms in *-ēni* on the analogy of *seni*. *Undeceni* '99 at a time' (Plin. 36. 8. 14) is noticeable.

primus=**prismus* (p. 213), cf. *pris-cus*, *pris-tinus*, *πρί-υ*. In form it is a superlative; cf. *πρόμος*.

tertius=*tritiōs*, Sanskrit *tr̥tīya*, with *ri* becoming *er* in an unaccented syllable (p. 192).

quartus for *qtuṛtōs*, cf. p. 369.

septim-us, *decim-us* have a termination *-os*, not *-mus* (p. 110, De Sauss. p. 30).

octāvus is similarly formed from *oktōu-*, with Indo-European *ōu* becoming Latin *āu* (p. 187).

nōnus (for *noum-us*) may owe its second *n* to assimilation to the first.

All other ordinals are formed with the suffix *-timus* (Sanskrit *-tama*), *-ensimus* (= *ent-timus*, p. 207). Thus *vigēsimus*, *vicēsimus*=*vikṣt-timus*, and the termination *-c(n)simus* is then extended, e.g. to *ducentessimus*. Priscian mentions a form *ducesimus*, which would be more regular.

In the multiplicatives, *simul* (older *semol*)=*sm̥l̥*; the fuller form appears in *semel*, *bis*=*duis* (*duis* is quoted Paul. *Fest.* 66), cf. Sanskrit *dvīs*, Greek *δFίς*. *ter* is the unaccented form of **tris*, Greek *τρίς* (cf. p. 192), perhaps originating in phrases like *bīs et ter* with only one accent. *quater* for **quatur*, *qtṛ*, Sanskrit *catur*, is on the analogy of *ter*. The rest are formed with a termination *-iens* (= *ins*), Greek *-ias* in *τρίας*, cf. *triens* (*K.Z.* xxv. 137). *vic-iens*, *tric-iens* are on the analogy of *deciens*.

Forms like *bi-fariam* may be compared with the Greek *δι-φάσιος*. *du-bius* perhaps=*dui-bhūios* from the root *bhū* in *φύω*.

CHAPTER XV.

The Verb.

THE Verb proper is distinguished from other parts of speech The Verb. by the union in one and the same word of subject and predicate, which are severally expressed in the ending and the stem of the verbal form. As the endings can all be expressed by Personal Pronouns, they are called Person endings, and are either primary, secondary, or those belonging to the Imperative Mood.

For the sake of practical convenience two main divisions of Finite and Infinite. the verb are made, into forms Finite and forms Infinite. The Verb Finite alone can express a complete sentence, and its forms contain elements signifying differences of person, number, time, and modality. The Verb Infinite in the Infinitives, Participles, and Verbal nouns belongs properly to the nominal class. The Infinitive in Greek for instance was, as we shall see, originally the dative of an abstract noun. Subsequently there grew up such idioms as the use of the Infinitive with cases, and the introduction of different tenses into the Infinitive mood, which bring it nearer in character to the Verb Finite.

In Inflexional languages like Greek and Latin there is a Inflexional forms. great variety of grammatical forms. The Greek approximates most closely to the Sanskrit, and from a comparison of these two languages we can obtain an idea of the structure of the Indo-European Verb. Greek and Latin mark by changes of form the character of the affirmation, and the mental attitude of the speaker. This is what we understand by difference of Moods (*ἐγκλίσεις*). Differences of time are marked by differences of Tense (*χρόνοι*), which again are expressed by change of form. So too with differences of Person (*πρόσωπον*) in the

subject of the proposition; of number (*ἀριθμός*); of the state of the subject (*διάθεσις*), which we call Voice. All the foregoing differences of form are embraced under the general term of conjugation (*συνύγια*).

The Greek Verb in its different Moods and Tenses shows a greater variety of Stem formation than the Noun.

The first distinction to be noted is that between Thematic and Non-thematic Stems.

Thematic
Stems.

Thematic Stems are those in which the termination is preceded by the vowels *ε* and *ο*, of which *ο* appears before nasals and *ε* before other letters, e.g. *λύ-ο-μεν*, *λύ-ε-τε*, *λύ-ο-ντι* (= *λύουσι*).

In the Subjunctive Mood this thematic vowel is lengthened and we have *λύ-ω-μεν*, *λύ-η-τε*, *λύ-ω-σι*.

Non-
thematic
Stems.

Non-thematic stems do not show this variable *ε* and *ο*, but the ending is added directly to the stem, which ends either in a consonant as in *ἔσ-μέν*, *ἴδ-μεν*, or in *α* as in the Perfect and Sigmatic Aorist, e.g. *λελύκα-μεν*, *ἐλύσα-μεν*.

In the third singular of these tenses, however, we must notice that the *α* is changed to *ε*, *λέλυκε-ν*. The *α* of such tense-stems must be distinguished from the *α* of the verbal root in such a verb as *ἵστα-μαι*, *ῥστα*.

In the Perfect the *α* was not originally carried through all numbers and persons. Thus *πέποιθα-ς* but Epic *ἐπέπιθ-μεν*, *ξοικα-ς* but Epic *έικ-την*.

This *α* is to be distinguished from the thematic *ε* and *ο*, and we may find an analogous distinction in nominal Inflection. As in the consonantal declension we have acc. *πόδ-α*, but in the *O*-declension acc. *λόγ-ο-ν*, so in the verb we find *ἔθηκα* but also *ἔλυο-ν*, *ἔθηκα-ς* but also *ἔλυε-ς*.

Thematic
Vowel.

The name Thematic Vowel implies that the addition of this vowel makes the verbal stem into a new theme, and that it is not to be regarded as a mere euphonic addition serving as a connecting link between stem and ending. We may draw a comparison between the stem *λεγο-* of *λέγ-ο-μεν* and the stem *λογο-* of *λόγ-ο-ς*. What has been said of the verb applies also to the noun.

The origin of the personal endings cannot be demonstrated with certainty. We have already distinguished between roots Predicative and roots Pronominal. It is in the Pronominal roots that we must seek the origin of the Personal endings. But it is not possible in all alike to trace with precision the history of their development from the original form.

Nature of
Person-
Endings.

It is not difficult to discern in the *-mi* of $\delta\acute{\iota}\delta\omega\mu\iota$ a resemblance to the stem of the first personal pronoun, or to see a demonstrative stem in the ending of $\delta\acute{\iota}\delta\omega\tau\iota$ ($=\delta\acute{\iota}\delta\omega\sigma\iota$), but it is more difficult to identify the suffix *-si* of the 2nd pers. sing. with *tva* (=thou).

The theory of pronominal affixion, when pressed furthest, assumes that the stems *ma* and *tva* were used to form person-endings in the sing. and compounded with one another to form the person-endings of the dual and plural.

Thus we are called upon to suppose that the ending *-τε* of the 2nd plural, must have sprung from an original *tva-tva*, for which some foundation may conceivably be found in the fuller Latin ending *-tis*. But when we are asked to go further and say that the ending *-μεθα* is compounded of *ma-tva-tva*, and *-σθε* of *tva-tva-tva*, we no longer seem to tread on solid ground.

Supposing that we do assume a pronominal origin for the person endings, there is no need to refer any of them back to such reduplications as we have quoted. There may have been different pronominal stems, just as we find a difference between the stems of singular and plural in the personal pronouns. At the time of the separation of the different races the person endings must already have had a long past history, and no one can say with confidence how or of what elements these terminations were composed (cf. p. 23, and Max Müller, *Science of Thought*, p. 233).

The primary ending of the first sing. act. has two different forms. Thematic verbs have *-ω*, e.g. $\phi\acute{\epsilon}\rho\omega$, non-thematic have *-μι*, e.g. $\iota\sigma\tau\eta\mu\iota$. The Sanskrit ending is *-mi* in both.

Greek
Person-
endings.
First
sing. act.
Primary
ending.

On the ground of such forms as ἐθέλωμι (A. 549) Curtius assumes that -μι was the original ending in all Greek verbs. Thus ἴστη-μι, φέρο-μι, ἐθέλω-μι (subj.). In Sappho and Pindar we find such forms as κάλλημι, αἴτημι, etc., and in Homer besides ἐθέλωμι are to be found εἰπωμι, ἴδωμι, τύχωμι. So too in the Optative which in the other persons shows secondary endings, the 1st pers. sing. ends in -μι, e. g. φέροιμι.

Another explanation has been suggested (*M. U.* i. 146, ii. 121), namely, that the long -ω is the result of contraction, between the short thematic ο of φερο-, and a vowel termination (cf. p. 441).

Secondary
ending.

The secondary ending of the 1st sing. is -ν, Indo-European -m, and -a:—

ἔφερον

Sanskrit *ábhara-m*.

εἶην

Latin *siem*

Sanskrit *syām*.

After consonants the *m* becomes sonant and appears as -a, as in ἦσ-η, ἦα. So also with ἔχεφα, ἔδειξα, etc.

This *a* has been extended by analogy beyond its proper limits. Thus it takes the place of -ον in the forms εἶπα, ἦνεγκα, and also appears after a vowel in a non-thematic verb, as in ὑπερεῖθεα (Hdt! 3. 155).

The ending of the 1st pers. sing. of the perf. is -a. We do not find any trace of a final nasal in this termination in Greek or Sanskrit, and in all probability *a* was the original ending.

Curtius on the evidence of Aeolic οἶδημι (= οἶδα) assumed that -μι was the original ending of the perfect, but this form is rather due to a false analogy, as is the case with ἴσαμι, which is quoted in Hesychius, formed on the model of ἴσασι.

Second
sing. act.

The Primary ending is -σι, Sanskrit *bhāra-si*. In Greek this ending only appears in the Substantive verb, viz. Homeric ἔσ-σι.

The form εἶ, which is post-Homeric, arose from ἐσι, cf. Sanskrit *ási*. From this εἶ by the addition of *s* after the model of φῆς, etc., came εἶς (also accented εἶς), which is an Ionic form.

The ordinary ending of this person in Thematic Verbs is

-εις, e. g. φέρεις. This form cannot arise simply from φερε-σι, for if the intervocalic σ, according to the Greek rule, fell out we should have φέρει. Perhaps this s, which appears in all dialects, was an extension of φέρει (= φερεσι) borrowed from the secondary ending ξφερε-s.

The same explanation will also apply to the subj. φέρης.

In the non-thematic conjugation, -σι has been replaced by the secondary ending -s, e. g. δίδως, ἴστηs, which we may compare with the -s of ἐτίθει-s, ξφερε-s.

Many forms have been introduced into this conjugation upon the analogy of the contracted verbs, cf. p. 399.

The ending of the 2nd sing. of the perfect was -θα.

-θα answers to the Sanskrit termination -tḥa; οἶσ-θα (= οἶδ-θα), Sk. *vet-tḥa*. Not only οἶσ-θα but all second persons sing. of the perf. of stems ending in τ, δ, θ, or σ have the termination -σθα, but the σ belongs to the stem and not to the termination.

The form ἦσθα of the imperf. of εἰμί points back to an old perfect ἦα, ἦσθα, ἦεν inflected like οἶδα, which afterwards coalesced¹ with the imperfect of the same verb (cf. *K. Z.* xxvii. 315).

On the model of ἦσθα we also have the Attic forms ξφῆσθα, ἦδησθα (cf. Rutherford, *New Phryn.* p. 225).

In Homer the same ending appears in ἐθέλησθα, etc., and the optatives βάλοισθα, κλαίεισθα, where the s forms no part of the verbal stem, but belongs to the termination. The form of the termination -σθα in place of -θα is due to the analogy of οἶσθα, ἦσθα, where σ is a part of the stem.

The primary ending of the 3rd sing. is -τι.

ξσ-τι, Sanskrit *ás-ti*,

Doric δίδω-τι, Attic δίδω-σι Sanskrit *dādā-ti*.

This is the ending in Greek of the third sing. of the -μι conjugation generally. It also appears in the Epic ἐθέλησι,

Third sing.
act.

¹ Schmidt and Brugmann suppose that as the forms ἦα, ἦστον, ἦμεν were common both to the perfect and imperfect of εἰμί, the two tenses came to be regarded as one, and the form ἦσθα of the perfect replaced the proper imperfect form ἦs.

ἀγῆσι, λάθῃσι, etc. But here as in ἐθέλησθα we need not suppose the ending to be original. The iota subscript points rather to an extension of the proper ending by an external addition. The ending is almost entirely confined to the Homeric poems and exists side by side with the normal -ῃ.

In the thematic conjugation we have the ending -ει, e.g. φέρει, Sanskrit *bhāra-ti*. The corresponding form to the Sanskrit would in Greek be φερετι, and this according to rule would pass to φερεσι. Like the second pers. the third has probably been influenced by the secondary ending:—

e.g. φέρεις φέρει follow φέροις φέροι, ἔφερες ἔφερε.

The Secondary ending was originally τ:—

ἔφερε(τ), Sanskrit *álharat*.

φέρου(τ), Sanskrit *bhúrēt*.

The *t* remains in Latin (e.g. *erat*), but according to rule has disappeared in Greek. Latin has -*t* in the perfect *cecidit* where Greek has -ε, as in οἶδε, Sanskrit *védā*.

The ending of the third sing. of the sigmatic aorist is -ε, just as in the third sing. of the perfect. Thus ἔδεικ-σε (ἔδειξε), is like the perfect οἶδ-ε, and has not the same vowel as ἔδεικ-σας (ἔδειξας).

First
plural act.

The Doric termination is -μες, as found in inscriptions and in the imitations of Doric in Aristophanes. In the other dialects we find -μεν for both primary and secondary tenses, but where this form appears in Doric it is probably due to the influence of other dialects.

In Sanskrit we have old primary ending -*masi*, later -*mas*, while the secondary ending is -*ma*.

The Sanskrit -*mas* and the Latin -*mus* appear to point to a primary ending in -*s*, so that we may assume the Doric -μες to stand for the original primary ending, while the -μεν of the other dialects may represent the secondary ending.

But in both Greek and Latin alike there is but one ending for all tenses.

Second
plural act.

The person ending of the 2nd plural is always -τε.

The Sanskrit *bhāra-ṭha* leads us rather to expect a primary ending *-θε*, while *-τε* corresponds to the Sanskrit secondary ending *ābhara-ta*.

Of this person there are three primary forms :—

(1) *-ντι* for original Indo-European *-nti* which appears in the Doric *φέρουντι* (= Attic *φέρουσι*), Sanskrit *bhāra-nti*. Third plural act.

(2) *-αντι*, *-āσι*, Indo-European *-h̥ti* as in *ῥᾶσι*, *δεδιάσιν*, *ῥᾶσι* answering to the Sanskrit *s-ānti*, *y-ānti*. There are many such forms in Homer, e.g. *βεβᾶ-āσι*, *γεγά-āσι*, *μεμά-āσι*.

Monro, *H. G.* p. 6, regards the Hiatus of these forms as proving that the ending was originally *-σασι* answering to the secondary *-σαν*.

Thus *ῥασσι* is for *ῥδ-σασι*, and *εῖσαςι* the Attic 3rd pl. of *ῥοικα*, is for *εῖκ-σασι*.

Attic also shows *τιθέ-āσι*, *διδό-āσι*, whereas in Homer we have *τιθείσι* (= *τιθε-ντι*), *διδούσι* (= *διδο-ντι*); which, in spite of the accent, cannot for phonetic reasons be regarded as contractions of *τιθέ-āσι* and *διδό-āσι*.

(3) *-ᾶτι*, *-ᾶσι*, Indo-European *-h̥ti* unaccented. There are the Doric perfect *ἐθώκατι* (Hesych.) and the Homeric *λελόγαῃσι*, *πεφύκαῃσι* in which we have the short *-ᾶσι* with the long stem. Herodian speaks of many other instances in Ionic and quotes *μεμαθήκασι* and *πεφηνᾶσι* from Xenophanes (Curt. *Verb.* ii. 166). However in *πεπολῶσι*, *ἐστῆκασι*, where the stem is full, we have the ending *-ᾶσι*.

Osthoff, *M. U.* i. 100, explains *-ᾶτι* as an alteration in Greek for *-αντι*, upon the model of the ending *-ᾶται* of the 3rd pl. perf. midd. Thus on the model of *τετεύχαται* (N. 22) and similar forms, *πεφυκααντι* passed into *πεφύκασι*.

Secondary endings. (1) *-ν(τ)*, I.-E. *-nt*.

ἔφερον, Lat. *ferēbant*, *erant*, but Sk. *āsan*.

(2) *-αν*, I.-E. *-h̥t*, *ἔλυσαν*.

The original *ἐλυσαντι* should pass to *ἐλυσαν(τ)*, the final consonant of which would, according to Greek rule, drop out. *ἔλυσαν*, however, would be indistinguishable from the 1st pers. sing., so on the analogy of *ἔφερον* we have *ἔλυσαν*. Otherwise we must assume that the accent originally rested

on the final $-\acute{\eta}t$, which would according to rule pass in Greek into $-av(\tau)$. We have the ending $-v$ after the final vowel of stems of non-thematic verbs, as in the Homeric $\xi\sigma\tau\alpha\nu$, $\xi\beta\alpha\nu$, $\xi\phi\alpha\nu$, etc.

In the optative we have the ending $-\epsilon\nu$ in $\phi\acute{\epsilon}\rho\omicron\iota-\epsilon\nu$, $\epsilon\acute{\iota}-\epsilon\nu$, but Elean $\alpha\pi\omicron\tau\acute{\iota}\nu\omicron\iota\alpha\nu$, $\sigma\upsilon\nu-\acute{\epsilon}\alpha\nu$ point to a primitive $\phi\epsilon\rho\omicron\iota-\alpha\nu$, $\epsilon\acute{\iota}-\alpha\nu$, representing an original ending $-\eta t$. $-\alpha\nu$ appears in the 3rd pl. opt. of the so-called Aeolic aorist, e. g. $\tau\acute{\iota}\sigma\epsilon\iota-\alpha\nu$. This ending is represented by ν alone in Bekker's reading $\alpha\lambda\phi\omicron\iota\nu$, v. 382 (Monro, *H. G.* § 83).

The exact explanation of the $-\epsilon\nu$ of $\epsilon\acute{\iota}\epsilon\nu$ is uncertain. The quality of the vowel may have been assimilated to the η of $\epsilon\acute{\iota}-\eta\nu$, $\epsilon\acute{\iota}-\eta\varsigma$, etc., or perhaps modelled upon the aor. pass. so-called, e. g. $\acute{\epsilon}\phi\acute{\alpha}\nu-\eta\nu$, 3rd pl. $\acute{\epsilon}\phi\alpha\nu-\epsilon\nu$.

The ending $-\sigma\alpha\nu$ appears in $\acute{\epsilon}\theta\epsilon\sigma\alpha\nu$, $\acute{\epsilon}\gamma\nu\omega\sigma\alpha\nu$, $\epsilon\acute{\iota}\eta\sigma\alpha\nu$, and in inscriptions of the second century B. C. we find such forms as $\acute{\epsilon}\lambda\acute{\alpha}-\beta\omicron\sigma\alpha\nu$, $\epsilon\acute{\iota}\pi\alpha\sigma\alpha\nu$. It was probably extended from the sigmatic aorist. We find it extended to the strong aorist in such cases as $\acute{\epsilon}\beta\eta\sigma\alpha\nu$ —side by side with $\acute{\iota}\pi\acute{\epsilon}\rho\beta\acute{\alpha}\sigma\alpha\nu$ —to the pluperfect, the aor. pass., and lastly to the optat., as in the form $\sigma\tau\alpha\acute{\iota}\eta\sigma\alpha\nu$ (P. 733).

Dual endings.

For the 1st pers. dual Greek has no separate form.

For the second and third we have primary $-\tau\omicron\nu$, $-\tau\omicron\nu$, secondary $-\tau\omicron\nu$, $-\tau\acute{\alpha}\nu$ ($-\tau\eta\nu$).

The primary endings of the Sanskrit $-t\acute{h}as$, $-tas$ have no resemblance to the Greek, but the secondary $\acute{\epsilon}\phi\acute{\epsilon}\rho\epsilon-\tau\omicron\nu$, $\acute{\epsilon}\phi\acute{\epsilon}\rho\acute{\epsilon}-\tau\eta\nu$ answer to $\acute{a}bhara-tam$, $\acute{a}bhara-t\acute{a}m$. Cf. Monro, *H. G.* § 5 note.

In Homer there are three instances of the 3rd dual imperf. in $-\tau\omicron\nu$, where the metre does not admit of $-\tau\eta\nu$. K. 363 $\delta\acute{\iota}\omega\kappa\epsilon\tau\omicron\nu$, N. 345 $\acute{\epsilon}\tau\epsilon\acute{\upsilon}\chi\epsilon-\tau\omicron\nu$, Σ. 583 $\lambda\alpha\phi\acute{\upsilon}\sigma\sigma\epsilon\tau\omicron\nu$, while, on the other hand, there are three cases where the termination $-\tau\eta\nu$ is used for the 2nd pers. $\kappa\alpha\mu\acute{\epsilon}-\tau\eta\nu$, $\lambda\alpha\beta\acute{\epsilon}-\tau\eta\nu$, $\acute{\eta}\theta\epsilon\lambda\acute{\epsilon}-\tau\eta\nu$, which is a very common usage in later Greek.

Person-endings of Middle voice.

Middle endings are to be found in Sanskrit, Greek, and Gothic, with some traces in Latin (cf. p. 468).

It is not possible to say what is their etymological relation to the endings of the active. Few of the active endings show clear traces of their origin; the endings of the middle voice are even more obscure.

1st sing. termination, primary -μαι, secondary -μᾶν (-μην). First sing.

In the case of the primary ending of the Middle, just as of the Active Voice, there may have been an original difference between the thematic and non-thematic conjugations.

In Greek the ending -μαι represents the original middle ending of non-thematic verbs, but has also become the ending of the thematic verbs.

The Sanskrit *bhāre*, on the other hand, shows the original middle ending of the thematic verbs, but this ending has also become the ending of the non-thematic verbs, viz. *bībhre*, from the same *√bhr*.

Primary termination -σαι—φέρε-σαι, φέρε-αι, φέρη, Sanskrit *bhārasē*; -σαι remains in ἦσαι, γεγράψαι (-π-σαι), etc. Second sing. midd.

In the case of βούλει, οἶει, etc., where -ει cannot come from -εαι, the form may be active, and have been transferred to the middle (-ει = -εσι).

In the verbs in -μι, σ remains between two vowels, contrary to the ordinary phonetic rule of the Greek language. So also in the perfect. In Homer we have δύνα-σαι, ὑποδάμνα-σαι, παρίστα-σαι, μέμνησαι, but also μέμνηαι.

Secondary termination -σο—ἐφέρε-σο, ἐφέρω, ἐφέρων. -σο remains in ἦσο, ἐγγράψο (-π-σο), etc.

After a vowel the σ of -σαι and -σο ought phonetically to disappear. It does so disappear in the thematic conjugation and in the sigmatic aorist middle, e. g. ἐλυσας, ἐλύσω. But Greek usage is not consistent in its treatment of this intervocalic σ. Thus in Homer we find δίζηαι, παρίσταο, μάρναο, and in the perfect μέμνηαι, βέβληαι, pluperfect ἔσσονο, side by side with the forms δύνασαι, μέμνησαι, etc. So in Aristoph. *Acharn.* 870 occurs the Boeotian πρίασο, but in *Ran.* 1227 ἀποπρίω, *Vesp.* 1440 ἐπρίω.

The retention of the σ of -σαι, -σο, after a vowel, is due to

a restoration based on the analogy of the consonantal stems, such as γέγραψαι. Accordingly -σαι appears in the perfect and pres. of the -μι conjugation, and -σο in the impf. and plupf. The later tendency to make -σαι the uniform ending is shown in the sentence of the grammarian Moeris—ἀκροῖ Ἀπτικοί, ἀκροῦσαι Ἕλληνες (cf. Osthoff, *M. U.* ii. 38).

Third sing. Primary termination -ται, Sanskrit -te :—
midd. φέρε-ται, Sanskrit *bhára-te*.
Secondary termination -το, Sanskrit -ta :—
 ἐφέρετο, Sanskrit *ábhārata*.

First plur. Termination -μεθα, for which Sanskrit shows -*mahe*. There
midd. is also in Greek the form -μεσθα, which appears in Epic ἰκό-
 μεσθα, γενόμεσθα, and in the Iambic and Trochaic metres of
 the Tragedians and Aristophanes. The σ of -μεσθα may be
 due to the analogy of the endings -σθον and -σθε.

Second Termination -θε, e. g. ἦσ-θε, πέφαν-θε, πέπυσ-θε. -θε seems
plur. midd. to be for θFe, with which we may compare Sanskrit -*dhe* for
 primary, -*dham* for secondary ending. There is a difference
 between the final vowel in Greek and Sanskrit, of which
 there is no certain explanation.

The σ of -σθε, as in φέρε-σ-θε, is not original. Originally appearing only in stems ending in σ or a dental, it has passed by analogy into all other stems for the sake of uniformity. Thus in ἦσ-θε, λέλυσ-θε the σ is regular, but not so in λέγε-σ-θε, φέρε-σ-θε.

Third plur. The Primary endings of the third plur. mid. are -νται, -αται
midd. (-ηται) :—

 φέρονται, Sanskrit *bhárante*.
 εἵαται, Sanskrit *áśatē*.

In Homer we have κέαται, side by side with κείαται, and in Attic τεράχαται, ἐφθάραται, τετράφαται, from the perfect stems ending in a consonant. For others outside Attic cf. p. 112.

The endings -αται and the secondary -ατο have been also

added to vowel stems, as for instance in Homer to stems in *ι* and *υ* and long vowels; e.g. *κεκλί-αται*, *κέι-αται* (*κέαται*), *εἰρῡαται*, *βεβλήαται*. In Herodotus we have *ἡγάαται*, *κεκλέαται*, with shortening of *η* before *-αται*, and also in the present *τιθέ-αται*, *ἐκδιδό-αται*, *δυνέ-αται*.

The rule is that *-αται*, *-ατο* should appear after consonants and *ι* and *υ*, but *-νται*, *-ντο* after vowels.

Side by side with these forms we may set the Attic *τιθέ-ασι*, *διδό-ασι* of the active.

The Doric *κιαται*, *γεγραψαται* from the Heracleian tables show that *-αται* was not confined to Ionic and Attic. *γεγραψαται* shows an ending *-σαται*, which may be compared with the active ending *-σασι* of *ἴσασι* and *εἴξασι* (cf. p. 379).

Secondary ending, *-ντο*, *-ατο* (*-ητο*).

Thus *ἐφέροντο*, Sanskrit *ābharanta*.

εἶατο (*ῆατο*), Sanskrit *āsata*.

Other instances are to be found in *κέατο*, *εἰρύατο*, *ἐτετάχατο*. Apart from the Indicative, *-ατο* appears as an ending of the Optative Mood, e.g. *γενοίατο*, *ἀπολοίατο*. This ending is regular in Homer. The only exception is the reading *μαχείωντο* (A. 344), which can be altered to *μαχείοιαι* 'Ἀχαιοί.

Before *-αται*, *-ατο* gutturals and labials were aspirated, e.g. *ἐτετάχ-ατο*, *τεθάφ-αται*, but not dentals, as in *κεχωρίδαται*, *ἀγωνίδαται*.

The Termination *-μεθον* of the first pers. dual, is only sparingly used; Ψ. 485 *περιδώμεθον*, Soph. *El.* 950; *Phil.* 1079. First pers.
dual midd.

The form bears no resemblance to the Sanskrit *-vāhē*, *-vāhi*, but approximates to the 1st pers. plural *-μεθα*.

Primary terminations *-σθον*, *-σθον*. Secondary terminations *-σθον*, *-σθαῖν* (*-σθην*). 2nd and
3rd Dual.

These do not resemble the Sanskrit. We cannot therefore reconstruct the original form, nor can we with any certainty determine the analogy upon which these forms arose in Greek.

Augment. : The name Augment is a translation of the *αὔξησις* of the later grammarians¹. The Augment appears in Sanskrit, Iranian, and Greek, with some traces in Latin (p. 457); it is prefixed to verbal forms only in the indicative mood. Both in the Vedas and in Homer it can be omitted, as also in those parts of Tragedy most closely allied to Epic poetry—the speeches of the Messengers.

Early theories of its origin were Buttmann's, who regarded it as a curtailed reduplication, and Bopp's, who regarded it as a privative (cf. p. 8).

It is true that in some verbs the augment of the preterite assumes the same form as the reduplication of the perfect, e. g. *ἐξήγησα* beside *ἐξήγηκα*. But, on the other hand, the vowel of reduplication varies according to the tense in which it occurs, and according to the nature of the verb-stem. Again, if augment is reduplication, what has become of the initial consonant, and why is the augment restricted to the indicative mood while reduplication extends to all moods alike?

As to the theory that the augment is a privative, apart from the fact that the augment is *ε* not *α*, this *α* privative before a vowel becomes *αν*:—e. g. *ἀ-θάνω* but *ἀν-αιμος*, while the augment shows no sign of a nasal before vowels. Then as to meaning; Bopp's explanation makes a dichotomy of tenses into present and not-present. But what reason is there for supposing that this negation should affect only the notion of time and not negative the whole verbal notion?

We must rather look upon the augment as originally an independent prepositional word expressing priority. Thus *ἐλειπον* = Indo-European *é leigom*. Subsequently it coalesced with the verb form into a single word. This union began in Indo-European times, but was not completely carried out in all cases. Thus *ἦν*, Doric *ἦς* (= *erat*), and in the Veda

¹ The term is not used till after Herodian. Up to that time the prefix of the augment was better described as a *κλίσις* or *κίνησις* of the verb. In the *Etymologicum Magnum*, on *ἐνδυνε* there occurs the note—*οἱ ἱστανες αὐξήσεις οὐ δέχονται*.

ás, comes from an original *é-est*. As a contraction this must be referred to Indo-European time, for the Greek contraction of *εε* is *ει*. On the other hand we find traces of the period when *é* was still an independent sound in the arbitrary omission of the augment in Homer, e. g. *βῆ* for *ἐβῆ*, etc. This omission happens both in the case of the syllabic and the temporal augments. Herodotus only drops the syllabic augment in the pluperfect of compounds and in iteratives, e. g. *καταλέλειπτο*, *λάβεσκον*: but the temporal augment is often omitted, especially before two consonants, e. g. *ἀρρώδεον*, *ἔρδον*, *ἔρξαν*, etc. In *χρῆν* (= *χρη ἦν*) the omission of the augment is only apparent; *ἐχρῆν* is a later formation.

The augment was not only an independent element, it was also accented.

According to Wackernagel (*K. Z.* xxiii. 470), in the I.-E. language the accent rested on the augment in principal sentences, while in subordinate clauses it rested on a following syllable. The omission of the augment then should be confined to dependent sentences; *á-bhūt* = *íφν*, *a-bhūt* = *φῦ*.

A proof of the accentuation of the augment is the rule of Greek compounds by which the accent never passes back beyond the augment, as e. g. in *παρέσχον*. In this particular, Greek has been more conservative than Sanskrit (cf. p. 271).

When the verb-stem begins with a vowel the augment Temporal
Augment. coalesces with this vowel, and we get e. g. *ἄγον* (*ἦγον*), *ᾠπρο*. We can hardly regard this as the result of contraction in Greek. Regular contraction of *ἐ-αγον*, *ἐ-οπρο* would give *ἦγον*, *οὔπρο*. We must rather assume that a simple lengthening of the initial vowel was regarded as characteristic of the preterite. Doric *ῆς*, Vedic *ás*, may point to original contraction, and afterwards upon such an analogy, a quantitative lengthening of the initial vowel stood for the Temporal Augment. In *ἱκέτευσσά, ὕμναιον*, as in *ἦγον*, the long vowels are the result of quantitative lengthening, and do not stand for *ε-ι-*, *ε-υ-*. *ἱάχον* in Homer stands for *ἐΐφαχον* (= *ἐΐαχον*) (cf. Monro, *H. G.* § 396).

The apparently unaugmented forms in Herodotus, viz.

αἵτεον, αἵνεον, αἵρεον, etc., and εὔξατο, αὔξετο of Attic may very well stand as the regular representatives of original Greek forms with *āi*, *ēu*, *āu*, shortened as in Ζεύς, ναῦς (p. 183). The long vowel of ἦτουν, ἠύξάμην is a lengthening parallel to that which has taken place in ἦγον, ὤρω.

Until the Ionic alphabet was adopted in Attica at the end of the fifth century there was only one sign for ε and η, but from that date onwards till the middle of the fourth century, stone records justify us in assuming ἡῦρισκον, ἡῦρον, ἡύχόμην, ἡῖκαζον as Attic forms (Rutherford, *New Phryn.* p. 244).

Where a vowel followed the initial diphthong, it was lengthened and the preceding diphthong unaltered, e. g. ἡῦρισκον but εὔ-ηγρέτουν.

In many stems where an originally initial consonant has fallen away, we find a Syllabic and not a Temporal Augment.

The *F* has fallen out, e. g. in ἐ-άγη, ἐ-αξε, ἐ-άλη, ἐ-ειπε, εἶδον for ἐFιδον, εἴρυσσα for ἐFερυσσα. An *σ* has fallen out in εἴπετο √σεπ, εἶσα √σεδ, εἶχον √σεχ. In the aspirated εἴπετο, εἶσα, εἴρπον √σερπ, the *σ* has passed into the rough breathing, which has then been thrown back on to the augment. In the case of εἶχον the smooth breathing has remained because of the following aspirate *χ* (cf. p. 174).

An exception to this shifting back of the rough breathing on to the augment is to be found in the form ἄλτο from ἐ-άλτο, cf. ἄλλομαι (= *sal-io*). The smooth breathing has been extended in this tense beyond the indicative, as we find ἄλμενος, μετ-άλμενος.

In other cases the original initial consonant is forgotten, as in οἰκέω, ᾠκησα.

η as Aug-
ment.

In Greek we find η- as augment side by side with ἐ-, e. g. ἠβουλόμην, ἠδυνάμην, ἠμελλον, and Homeric ἠεῖδη. Similarly in the Veda, the augment is in a few instances long *ā*.

Besides these cases, an augment η- has also been assumed in other verbs in which an original spirant has been lost (Wackernagel, *K. Z.* xxvii. 272).

Thus in the Attic ἐ-ώρων, ἀν-έ-ωξα, ἐ-άγην there was a metathesis of quantity for original ἠForων, ἠFάγην, just as in

βασιλῆα, Attic βασιλέᾱ. Homer has ἐάγην, but (Λ. 559) ἐάγη, unless we read ἐάγη, the perf. subj. (Monro, *H. G.* § 42).

As the imperfect of οἶγνυμι, Homer has ὠἶγνυντο, which is for ἐφωἰγνυντο and this for ἡφολῖγνυντο. Without metathesis of quantity we may assume an original augment η- in ἡργαζόμεν for ἡφεργαζόμεν, and in—

ἡλπιζον for ἡφελπιζον.

ἦδη for ἡφειδη.

ἦκον for ἡφεικον.

ἦκαζον for ἡφεικαζον.

ἑώραταζον for ἡφεφορταζον.

A comparison with the perfect justifies this hypothesis in the case of ἐόρακα beside ἐώρων, and ἐάλωκα beside ἐάλων, where the perfect shows no trace of the augment η-. ἡργαζόμεν was the Attic form up to the time of Demosthenes, and though in Demosthenes there is a wavering between ἡργαζόμεν and εἰργαζόμεν, the perfect is always εἰργασμαι. In Aristophanes, *Eq.* 1076, we have ἦκασεν, but *Av.* 807 εἰκάσμεσθα.

A rule of Attic augmentation, which may here be noticed, is that whether a verb is compounded with a preposition or only appears to be so, yet it takes the augment after the first part of the compound (Rutherford, *New Phryg.* p. 79).

Thus προφήτης, προφήτευσεν.

ἐπιστάτης, ἐπεστάτουν.

ἐνάντιος, ἐνηντιώμεθα.

The doublets καθήμην, ἐκαθήμην—ἀφίει, ἡφίει—καθίζον, ἐκάθιζον are to be explained by the fact that the verb was sometimes regarded as compound, sometimes as simple.

In some cases double augmentation arose, e. g. ἡνειχόμεν, ἡμπειχόμεν, and was extended by analogy to such words as ἡντεβόλουν, ἡμφεσβήτουν, ἐδιήτουν, etc.

After the person-endings and the augment we can pass on to the consideration of the forms of the Greek verb in its various tense-stems. It is the stem which is the constant element in a group of related forms. The termination indicates differences of person and number, and also the distinc-

tions of voice which express the relation borne by the subject to the action, the difference, that is, between Active, Passive, and Middle. Differences of Tense (*χρόνοι*) are expressed by varieties of Tense-stem, while to express Modality a suffix is added to the Tense-stem.

Present
and Strong
Aorist.

The first group of Tense-stems consists of the Present and Strong Aorist stems. Between these stems there is in some cases no formal but only a syntactic difference—a difference, that is, of function. *ἔφην*, for example, is an imperfect, while *ἔστην*, which is similar in formation, is a strong aorist. Again, *ἔγραφον*, *ἔγεμον*, *ἐνιπτόμην* are imperfects, but the similar *ἔτραπον*, *ἔβλαστον*, *ἐγενόμην* are aorists. On the other hand the tenses which contain the present stem, viz. the present and imperfect, denote action which is progressive, as opposed to the aorist, which denotes a single act or event. A tense which singled out a definite point in what is now going on would be an aorist present. There is no tense with such a function in Greek, though, as we have seen (p. 231), such verbs as *ἄγω*, *γράφω*, in *form* are of the strong aorist type. In English such a tense may be found in the '*I go, Sir, and went not,*' of St. Matt. xxi. 30. As distinguished from the aorist, the imperfect expresses an action or state which was contemporaneous with something else. The difference may be illustrated by the Homeric line—

ἔλκετο δ' ἐκ κολεοῖο μέγα ξίφος, ἦλθε δ' Ἀθήνη.

Sanskrit
Conjugation-
Classes.

The language which comes nearest to Greek in its wealth of verbal forms is Sanskrit. The Hindu grammarians distinguished ten different Conjugation-Classes. The basis of their classification was the formation of the present stem, which they regarded as the characteristic part of the verb. Their conjugations may be distinguished into two main divisions, marked by a difference which has an important bearing upon the theory of the Greek verb. The first division comprises those verbs which show a shifting of the accent, which falls now upon the root or class sign, now upon the ending. Along with this shifting of the accent goes a variation in the

form of the stem, which is full when the accent rests upon the root, weak when it rests upon the ending (Whitney, *Sk. Gr.* § 604). The second main division of the Sanskrit conjugations consists of those verbs in which the accent is never shifted from the stem to the ending, and whose present stem always ends in *a*. Answering to these two main divisions we have in Greek the distinction into non-thematic and thematic verbs.

In non-thematic verbs there are four classes of present and aorist stems :—

Classifi-
cation of
Greek
Present-
stems.

1. The Root class, in which the present stem is identical with the verbal root. In some of these there is a variation of the stem in different inflexions.

2. The Reduplicated class, with or without stem variation.

3. The stem consists of the weak root with suffixes $-\nu\bar{\upsilon}$, $-\nu\check{\upsilon}$.

4. The stem consists of the weak root with suffixes $-\nu\bar{\alpha}$, $-\nu\check{\alpha}$.

Of the thematic conjugation we may distinguish five classes :—

5. The stem consists of the root, strong, weak, or reduplicated with the thematic vowel suffixed.

6. The stem consists of the root, strong, weak or reduplicated with the suffixes $-\iota\sigma$, $-\epsilon\epsilon$. To this class belong the denominative verbs and the causatives where the stem is made up of a full degree of the root with suffixes $-\epsilon\iota\sigma$, $-\epsilon\epsilon\epsilon$.

7. The stem consists of the root with suffixes $-\tau\sigma$, $-\tau\epsilon$.

8. The stem consists of the verbal stem with suffixes $-\sigma\kappa\sigma$, $-\sigma\kappa\epsilon$.

9. The Nasal class.

To take now these different classes of present stems in detail.

The first class consists of those verbs in which the verbal stem is identical with the root. This class answers to the Hindu second conjugation or root-class.

(a) Most of these verbs show an alternation of the stem between a full and a weak form. The full form is found in the singular indicative and subjunctive active, as for instance

$\epsilon\bar{\iota}-\mu\iota$

Sk. $\acute{e}-mi$

$\bar{\iota}-\sigma\tau\bar{\alpha}-\mu\iota$.

(a) With
stem varia-
tion.

The weak form is found in the dual and plural of the indicative and subjunctive active, as for instance

ἴ-μεν Sk. *im-ās* ἴ-σταῖ-μεν.

And throughout the middle, e. g. ἴσταμαι. So in the sing. of the aor. act. ἔχεφα (= ἐχέμεν), but in the middle ἐχυτο.

In Sanskrit the variation of stem is accompanied by a shifting of the accent, but in Greek this original shifting of the accent has been usually replaced by the system of accentuation peculiar to that language, and the accent is uniform throughout.

εἶμι.

In the present of εἶμι, *ibo*, we have

Sing. εἶ-μι εἶ, but K. 450 εἶ-σθα εἶσι.

Plur. ἴ-μεν ἴ-τε ἴ-ασι.

ἴασι is from ἴ-αντι for ἀντι, Sk. *y-anti*, with prefix of the *i* of ἴ-μεν, ἴ-τε.

The conjunctive is ἴω, instead of ἐἴω, Sk. *áy-āni*.

The optative is ἴοιμι, which is formed upon the analogy of the thematic verbs in -ω. Answering to Sk. *iyám* the proper form would be ἴην = ἴην. The form ἴε-λη, which is read in T. 209, seems to be formed like εἰδέλη and the δεδέλην of Plato, *Phaedr.* 251 A (cf. Monro, *H. G.* § 83).

The participle ὥν shows the original fem. form in the name of Demeter, Ἐπ-ἰασσα. In Hesych. we have the gloss ἴεσσα βαδίζουσα, where ἴεσσα perhaps stands for ἴασσα. In Sanskrit the stem of the masc. is *yánt*, but the nom. fem. is *yat-ī*.

The imperfect indic. in Att. was ἦα, ἦεσθα, ἦεν, or ἦει.

The plural ἦμεν, like Sk. *āima*, has the same stem form as the singular. The 1st pers. sing. was originally ἦα. The semivowel between two vowels should disappear, as e. g. βασεις becomes βάσεις, βάσεις. So ἦα becomes ἦα, but the iota has been retained in the singular as in the plural.

In Homer we have ἦα, ἦεις, ἦει, 3rd pl. ἦισαν and ἴσαν, also the dual ἴτην unaugmented.

εἰμι.

εἰ-μί, *sum*, has the strong stem ἐσ-, the weak σ-:—

εἰμι, Sk. *āsmi* εἶ, εἷς (εἷς), ἐσσί, Sk. *āsi* ἐστί, Sk. *āsti*.

Plural ἐσ-μέν, after the model of ἐσ-τέ beside the more regular Ionic εἰμέν, Sk. *smás*. Both ἐσμέν (εἰμέν) and ἐστέ have the strong root on the analogy of the singular.

3rd pl. ἔασι, Doric ἐντι, Att. εἰσί, Sk. *sánti*.

The proper Greek equivalent answering to *sánti* would be ἀντί, but the ε which appears in the other persons has been kept in this as well—ἔασι (= ἐσαντι), I.-E. *s-ḡti*.

The originally weak stem of the feminine participle remains in the Doric fem. ἔασσα for original σαττα, *s-ḡt-i-a*, to which the ε of the strong stem has been prefixed. The strong stem answering to σατ- would be σεντ-, but in Greek we have ἐών, ὦν, stem ὄντ-, after the analogy of the verbs in -ω. To the influence of the same analogy we may refer the Homeric form of the imperfect, ἔον, and the opt. ἔοι.

The imperfect in Homer, ἦα, answers to Sk. *ásam*, while Epic. ξήν and ῆην are anomalous formations; *ásam* is represented by ἦα, just as *áyam* by ἦα, in Homer ἦια.

The correct Attic form of the 1st sing. is ἦ (cf. Rutherford, *N. P.* 242), e. g. Aesch. *Choeph.* 523 οἶδ' ὦ τέκνον, παρῇ γάρ, where παρῇ was restored by Porson for πάρεϊ. The form ῆν, so frequent in the MSS., is not required by the metre in the dramatists. The form ῆμην is post-classical.

The 2nd and 3rd pers. ἦσθα and ἦεν, Att. ῆν, belong in character, as already noticed, to the Perfect tense system (p. 377).

In the dual and plural we have the η of the singular. The 1st plur. is ῆμεν, where the σ has, according to rule, disappeared. The 2nd pers. is ῆσ-τε, but side by side with this form we find ῆ-τε, probably on the analogy of ῆ-μεν.

ῆσ-αν maintains the intervocalic σ, after the example of ῆσ-τε, and has the long stem of the singular. A Boeotian form, παρ-εῖαν, represents the regular ῆαν.

Conjunctive ἔω (= ἔσω), Att. ὦ, cf. Lat. *ero*.

Optative εἴην (= ἔσ-ιην-ν), Old Lat. *siem*, Sk. *syám*. As in the plural of the indicative, Greek has the ε of the strong stem.

The stem appropriate to the 2nd sing. imperative is the

weak stem, as can be seen from the Sanskrit *é-mi* (εἶμι), imperat. *i-hí* (ἴθι). The short stem appears in Greek *ἐ-σῶ-θι*, *τέ-τλᾶ-θι*, *ὄμνῃθι*. It is true, however, that *τλῆ-θι*, *κλῦ-θι*, *βῆ-θι*, are exceptions. The termination *-θι* points back to an original *-dhi*.

From the *√és*, then, the Indo-European imperative would be *s-dhi*, which is actually to be found in the Zend *z-dhi*. In Greek, *σ-θι* would be the proper equivalent, but instead of this we have *ἴσθι*. Initial *σθ-* in Greek only appears in the group *σθένω*, *σθένος*, etc. However, if I.-E. *s-dhi* was pronounced *z-dhi*, and the *σ* of *σθι* in Greek was pronounced as the medial or sonant spirant, then *ἴσ-* may be a graphic representation of the sonant spirant for which the Greek alphabet had no distinctive character. There is no good ground for assuming a change of *ε* into *ι* in Greek, although there are such scattered instances as *ἵππος* beside *equus*.

An instance of *ι* as a prothetic vowel may be seen in *ἰ-κρίς* beside *κρίς* (Hesych.) and Epic *κτιδέη* (K. 335).

φημί.

In *φημί* the strong stem was *φᾶ*, the weak *φᾷ*.

Osthoff, *Z. G. d. P.* (p. 353) makes an attempt to connect *φημί* with the root of *φαίνω*, and gets the meaning 'say' out of 'I declare myself.' Just as beside Sanskrit *bhāmi* stands *bha-nā-mi*, so beside *φημί* there was originally a *φανᾶμι* which afterwards passed to *φαίνω* as *δάμνημι* to *δαμνάω*.

The only support in Greek of such a supposition is the *πε-φῆ-σεται* of P. 155.

The weak stem appears in *φᾶμέν*, *φᾶτέ*, and in the imperf. *ἔφᾶμεν*, *ἔφᾶτε*, *ἔφᾶσαν*.

ἦμι.

ἦμι (Arist. *Ran.* 37; *Nub.* 1145). *ἦσι*, Sapph. *Fr.* 97, but also *ἦτι* in Alcman. The preterite *ἦν* occurs in the phrase *ἦν δ' ἐγώ*, and the 3rd sing. *ἦ* in the phrase *ἦ δ' ὅς*. The verb may be compared with Sanskrit perfect *āha*, I.-E. *√ēgh*. *ἦ* is perhaps for *ἦκ-τ*, cf. *ἄνα* for *ἀνακτ* (p. 200).

This 3rd sing. *ἦ* is the most frequent and oldest form of the word, and *ἦμι*, *ἦσι*, *ἦτι* are post-Homeric.

ἔπαται.

ἔπαται.—The root of this word appears to be *rem*. The

Greek ϵ is therefore prothetic. There is a by-form $\epsilon\rho\acute{\alpha}\sigma\mu\alpha\iota$, and in Homer we find $\eta\rho\acute{\alpha}\sigma\alpha\tau\omicron$, $\eta\rho\acute{\alpha}\sigma\sigma\alpha\tau\omicron$, and $\epsilon\rho\acute{\alpha}\sigma\theta\epsilon$, just as beside $\acute{\alpha}\gamma\alpha\mu\alpha\iota$ Homer has $\acute{\alpha}\gamma\acute{\alpha}\sigma\theta\epsilon$. Attic writers in prose have only $\epsilon\rho\acute{\alpha}\omega$.

The Sk. $\sqrt{ram}$ means 'to enjoy oneself' only in the middle, e. g. Sk. $r\acute{a}m\acute{a}te$. This sense may come in I. 65 $\delta\varsigma\ \mu\acute{o}\lambda\epsilon\mu\omicron\nu\ \epsilon\rho\alpha\tau\alpha\iota$. To this root we can refer the adv. $\eta\rho\acute{\epsilon}\mu\alpha$.

In Homeric $\epsilon\rho\text{-}\sigma$ we do not find the full root, but we may compare $\iota\sigma\tau\text{-}\acute{o}\varsigma$, $\iota\sigma\tau\text{-}\acute{\iota}\omicron\nu$, from the root of $\iota\sigma\tau\eta\text{-}\mu\iota$, for a similar mutilation of the root in the derived word. With $\epsilon\rho\omega\varsigma$ beside $\epsilon\rho\acute{\alpha}\omega$ we may compare $\gamma\acute{\epsilon}\lambda\omega\varsigma$ and $\gamma\acute{\epsilon}\lambda\acute{\alpha}\omega$.

In $\kappa\epsilon\acute{\iota}\text{-}\mu\alpha\iota$ we have the strong stem throughout. So in $\kappa\epsilon\acute{\iota}\mu\alpha\iota$. Sanskrit the $\sqrt{cī}$ has the $guṇa$ strengthening throughout, e. g. $c\acute{a}ye$, $c\acute{a}yāṇa$.

$\eta\mu\alpha\iota$ is to be regarded as a perfect (Z. G. d. P. 171 ff.); 2nd $\eta\mu\alpha\iota$. sing. $\eta\sigma\alpha\iota$, 3rd $\eta\sigma\tau\alpha\iota$, Sk. $\acute{a}s\text{-}l\acute{e}$. Plur. $\eta\mu\epsilon\theta\alpha$, $\eta\sigma\theta\epsilon$, $\eta\tau\alpha\iota$ but in the MSS. $\epsilon\acute{\iota}\tau\alpha\iota$.

$\kappa\acute{\alpha}\theta\text{-}\eta\text{-}\tau\alpha\iota$ and $\eta\gamma\tau\alpha\iota$ are forms upon the model of $\eta\mu\alpha\iota$, $\eta\mu\epsilon\theta\alpha$, where the σ has disappeared regularly. In Homer and Herodotus we find $\epsilon\alpha\tau\alpha\iota$ for the 3rd pl., I.-E. $\acute{e}s\text{-}h\acute{t}ai$.

The participle $\eta\mu\epsilon\nu\omicron\varsigma$ has not got the perfect accentuation.

To the first class of verbs whose verbal stem is identical with $\epsilon\sigma\tau\eta\nu$. the strong aorist stem, belongs the aor. $\epsilon\sigma\tau\eta\nu$, Sk. $\acute{a}st\hbar\acute{a}m$.

In $\tau\acute{\iota}\theta\eta\mu\iota$, $\delta\acute{\iota}\delta\omega\mu\iota$, $\acute{\iota}\eta\mu\iota$, we find a weak aor. in $\text{-}\kappa\alpha$. But in $\iota\sigma\tau\eta\mu\iota$ we have no aor. in $\text{-}\kappa\alpha$ of the form $*\acute{\epsilon}\sigma\tau\acute{\alpha}\kappa\alpha$, because of the resemblance such a form would have borne to the perfect. In the same way we have $\acute{\epsilon}\beta\eta\nu$ and not $*\acute{\epsilon}\beta\acute{\alpha}\kappa\alpha$, $\acute{\epsilon}\phi\upsilon\nu$ and not $*\acute{\epsilon}\phi\upsilon\kappa\alpha$, $\acute{\epsilon}\delta\upsilon\nu$ and not $*\acute{\epsilon}\delta\upsilon\kappa\alpha$.

In the inflexion of $\epsilon\sigma\tau\eta\nu$ the long stem remains in the plural. The 1st pl. $\epsilon\sigma\tau\eta\mu\epsilon\nu$ is a new formation for $\epsilon\sigma\tau\acute{\alpha}\mu\epsilon\nu$, as can be seen by a comparison with the weak stems of $\acute{\epsilon}\delta\omicron\mu\epsilon\nu$, $\acute{\epsilon}\theta\epsilon\mu\epsilon\nu$, $\epsilon\acute{\iota}\mu\epsilon\nu$. In $\acute{\epsilon}\beta\eta\nu$ we find stem variation in the Homeric dual $\beta\acute{\alpha}\tau\eta\nu$ and the plural $\acute{\iota}\pi\acute{\epsilon}\rho\beta\acute{\alpha}\sigma\alpha\nu$, side by side with the long $\beta\acute{\eta}\tau\eta\nu$.

The stems $\theta\epsilon-$ (in $\xi-\theta\epsilon-\mu\epsilon\nu$, $\xi-\theta\epsilon-\tau\omicron$, Sk. *ádhi-ta*)— $\xi-$ (in $\epsilon\iota\mu\epsilon\nu$ from $\epsilon\sigma\epsilon\mu\epsilon\nu$) and $\delta\omicron-$ (in $\xi\delta\omicron-\mu\epsilon\nu$, $\xi\delta\omicron-\tau\omicron$, Sk. *ádi-ta*), are in reality for $\theta\alpha-$, $\acute{\alpha}-$, $\delta\alpha-$, as we have seen in the chapter on Ablaut (p. 236). The formation of the aors. in $-\kappa\alpha$ will be dealt with under the head of the perfects in $-\kappa\alpha$.

$\xi\phi\theta\eta\nu$.

In $\xi\phi\theta\eta-\nu$ $\sqrt{\phi\theta\acute{\alpha}}$, the long vowel is persistent throughout the indicative, except in the 3rd pl. $\phi\theta\acute{\alpha}\nu$ (Λ. 51), which is like $\xi\beta\acute{\alpha}\nu$, $\xi\sigma\acute{\alpha}\nu$. Still in the midd. we have $\phi\theta\acute{\alpha}\mu\epsilon\nu\omicron\varsigma$ (N. 387). Attic keeps the long vowel throughout the indic. active, e. g. $\xi\phi\theta\eta-\mu\epsilon\nu$, $\xi\phi\theta\eta-\sigma\alpha\nu$, while the short vowel appears in the Attic sigmatic aorist $\xi\phi\theta\alpha\sigma\alpha$.

$\sqrt{\kappa\tau\epsilon\nu}$.

The root $\kappa\tau\epsilon\nu$, Sk. *kṣan*, occurs in the weak form in $\xi\kappa\tau\alpha\mu\epsilon\nu$ ($\xi\kappa\tau\eta\mu\epsilon\nu$), $\acute{\alpha}\nu-\xi\kappa\tau\alpha-\tau\omicron$, Sk. *ákṣata*. The 3rd sing. $\xi\kappa\acute{\tau}\acute{\alpha}$, $\acute{\alpha}\nu\epsilon\kappa\acute{\tau}\acute{\alpha}$ is a new formation, with the weak stem of the plural, for $\xi\kappa\tau\epsilon\nu(\tau)$. In the 3rd pl. we have $\xi\kappa\acute{\tau}\acute{\alpha}\nu$, and in the subj. $\kappa\acute{\tau}\acute{\epsilon}\omega\mu\epsilon\nu$, which follow the analogy of roots in $\acute{\alpha}$, cf. $\xi\sigma\tau\acute{\alpha}\nu$ and $\sigma\acute{\tau}\acute{\epsilon}\omega\mu\epsilon\nu$. From the Sanskrit we see that the ending of the 3rd pl. is $-\nu$. This added to the weak stem of $\xi\kappa\tau\epsilon\nu\alpha$ would give $\xi\kappa\tau\nu\alpha\nu$, but this form has been assimilated to $\xi\sigma\tau\alpha\nu$, and so we have $\xi\kappa\acute{\tau}\acute{\alpha}\nu$.

Like the 3rd sing. $\xi\kappa\acute{\tau}\acute{\alpha}$ we have the Homeric $\omicron\upsilon\tau\acute{\alpha}$, just as $\omicron\upsilon\tau\acute{\alpha}\mu\epsilon\nu\alpha\iota$, $\omicron\upsilon\tau\acute{\alpha}\mu\epsilon\nu\omicron\varsigma$ resemble $\kappa\acute{\tau}\acute{\alpha}\mu\epsilon\nu\alpha\iota$ and $\kappa\acute{\tau}\acute{\alpha}\mu\epsilon\nu\omicron\varsigma$.

$\xi\chi\epsilon\alpha$, etc.

The aorists $\xi\chi\epsilon\nu\alpha$, $\xi\chi\epsilon\alpha$, $\xi\sigma\sigma\epsilon\nu\alpha$, $\epsilon\iota\pi\alpha$, $\eta\eta\epsilon\iota\kappa\alpha$ (Att. $\eta\eta\epsilon\gamma\kappa\alpha$), are inflected like the σ -aorist. In the plural we ought to find the weak stem, viz. $\xi\chi\nu-\mu\epsilon\nu$, but instead of this we have the stem of the singular. The weak stem appears in the Homeric $\sigma\acute{\upsilon}\tau\omicron$, $\chi\acute{\upsilon}\tau\omicron$, and in $\chi\acute{\upsilon}\mu\epsilon\nu\omicron\varsigma$ (Aesch. *Choeph.* 401, etc.). A 3rd pl. $\xi\chi\epsilon-\alpha\nu$ is found in Homer (Σ. 347; Ω. 799). The tense as originally inflected ran $\xi\chi\epsilon\alpha$, $\xi\chi\epsilon\nu\varsigma$, $\xi\chi\epsilon\nu(\tau)$, $\xi\chi\nu\epsilon\nu$: compare the Sanskrit *áçravam*, *áçrōs*, *áçrōt*, etc. (cf. Monro, *H. G. App. A.* 5).

In these aorists, as well as in the perfect, the sigmatic aorist, the aorists in $-\kappa\alpha$, the pluperfect in $-\epsilon\alpha$, and the imperfect $\eta\acute{\alpha}$, $\eta\acute{\iota}\alpha$ or $\eta\acute{\iota}\alpha$, the α is not an original part of the tense-stem, but belongs to the ending of the 1st pers. sing. From

this it has been extended throughout the tense, and we find it in all persons as a connecting vowel between the stem and the termination. Originally these tenses were formed in the same way as other non-thematic tenses: the ending was added directly to the stem. The process of the extension of *a* may be exemplified in the *ἔας*, *ἔατε* (for *ἦσθα*, *ἦτε*) of Herodotus, where *ἔα-* is treated as the stem. The *a* of the first pers. sing. is to be identified with the *-ν* (originally *-m*) of *ἔφη-ν*, *ἔβη-ν*, *ἔφν-ν*, etc.

ἔβην, Sk. *ágām*; *ἔφνν*, Sk. *ábhūv-am*. The *m* of the ending *ἔβην*. in Sanskrit becomes *-am* when it follows the semivowels *ī* or *u* (which are then represented by *y* and *v*) or after a consonant. In Greek under such conditions *m* becomes *a*.

The aor. *ἔπτην*, Dor. *ἔπτāν*, and *προσέπτα* (Aesch. *Pr.* 555), *ἔπτην*. shows no mark of stem variation in the indicative. It is usually put under a pres. *ἵπτημι*, but the root is *πετ* of *πέτομαι*, particp. *πτάς*.

ἔφνν shows the weak *φν* of Ablaut III throughout: *ἔφνν*, *ἔφνν*. *ἔφν-μεν*. So in Sanskrit in the same way we find *ábhūvam* in the singular, as well as *ábhūvan* in the plural.

(β) A verbal stem consisting of the root + *ə*, the inde- (β) Verb terminate vowel, is to be found in *κρέμα-μαι* and *ὄνο-μαι*, unless stem with *schwa*. we are rather to regard the root as disyllabic and ending in *κρεμω-*.

The verb *ἔμέω* is probably a later formation for the more original **Fεμε-μι*, Sk. *vámi-mi*, just as beside the older *ἀγαμαι* we find *ἀγάομαι*, and beside *τίθημι* *τιθέω*, and kindred forms.

Hesychius has *κεδάται· σκεδάννυται*. This *κεδάομαι*, just like the present *κεράω*, beside *κέρα-μαι*, *κεράννυμι*, has left the *-μι* inflexion and followed the analogy of verbs in *-ω*.

Other instances of this transference from the *-μι* to the *-ω* conjugation may be seen in—

ἐράομαι : *ἐραμαι*.

δεικνύω : *δείκνυμι*.

ἴω, *ἴοιμι*, *ἰών* : *εἴμι*.

ἐρύω : ἔρυσθαι.
 ὀμνύουσι : ὀμνύᾱσι.
 κίρνω : κίρνημι.

(γ) Long
stem
without
Ablaut.

(γ) We have a verbal stem in a long vowel without stem variation in ἄημι for ἄφημι, ἄφησι, ἄφητο—ἔγνω, ἔγνω-μεν.

The shortening of the vowel in ἄεισι, Doric ἄεντι, in γνόντ-ες, γνολήν, etc. is a change peculiar to Greek (p. 183).

Other instances of long stems without variation are ζῆθι, ἔζην, χρῆσθα, (ξύμ)βλητο, πλῆτο, the Homeric κατα-πτῆ-την (Θ. 136), perfect part. πεπτιῶτες, and with the secondary weak degree of the root, ἐρρύην, ἐμάνην, ἐάλων.

Under the first class of verbs we must consider certain aorist formations, which from the nature of the stem belong to this head.

Aorists in
-ην.

The strong aor. pass. in -ην is formed by affixing -η to the short form of the verb stem. As we find nothing resembling these formations in other European languages, we are driven to suppose that they are formations by analogy within the limits of the Greek language (App. p. 488).

Brugmann (*M. U.* i. 71) regards the aorists pass. in -ην as new formations in Greek framed upon the model of active preterites such as ἔβλην (Epic. ξυμβλήτην φ. 15) and ἔσβην. Thus the paradigm ἐφάνη-μεν, φανείην, φανῆναι, φανείς, answers to that of ἔσβην-μεν, σβείην, σβῆναι, σβείς. The stem in most cases shows the weak form, e. g. ἐλίπην, ἐρρύην. The η vowel is not limited to the aorist but appears in the future, e. g. ῥήσομαι, φανήσομαι.

The personal endings of the aorists in -ην are active, but their meaning is intransitive or else passive. Thus the intransitive meaning is to be found in ῥυῆναι, σαπῆναι, τακῆναι, μανῆναι. The passive meaning according to Monro (*H. G.* § 44) was an adaptation of the intransitive meaning; e. g. ἐκόπη ὑπ' αὐτοῦ is no more passive than ἀποθανεῖν ὑπ' αὐτοῦ. The change of meaning may be illustrated from the perfect. Thus the Homeric ἐφθορα, τέτροφα are intransitive, but in

Attic transitive (Soph. *El.* 306); the Homeric *τετιηώς, κεκοτηώς*, which are active in form, are almost passive in meaning. What for instance is the distinction of meaning between *τετιηότι θυμῷ* and *τετιημένος ἦτορ*? So too we may instance *ἔσβην* (= was quenched) and the use in Attic of the actives *ἐκπίπτω* and *πάσχω* as passives, also of *γίγνομαι* as the pass. of *ποιέω*, and *κεῖμαι* as perf. pass. of *τίθημι*.

Answering to the aorists in *-ην* we have certain other aorists differing from them only in the character of the vowel of the suffix.

Thus like aor. *ἐφάνην* fut. *φαιήσομαι* we have *ἐβίων* fut. *βιώσομαι*—*ἐάλων* fut. *άλώσομαι*—*ἐγήρᾱν* fut. *γηράσομαι*, aor. *ἐγηρᾶσαν* (Aesch. *Suppl.* 894)—*ἐπέ-πλωσ*, part. *ἐπι-πλώς* (Z. 291).

With these we can rank the *ἔδρᾱν* of the comedians, and *ἔτλᾱν* (*ἔτλην*).

We can explain *ἐβίων*, *ἐγήρᾱν* by assuming old presents in *-οω* and *-αω*, but cannot assume a pres. in *-εω* for all the aorists in *-ην*. Similarly *η* appears in the futures *βουλήσομαι, μαθήσομαι, ἀλεξήσω* without there being any corresponding present in *-εω*. We must rather suppose that there were a few forms such as *ἔσβην, ἔβλην*, upon which model other formations were afterwards made.

In Homer the ending of the 3rd pl. is *-εν* for *-ηντ*, as well as Attic *-ησαν* (cf. p. 183).

-ην appears on inscriptions as the 3rd pl. ending, but the *μιάνθην* of Δ. 146 is best explained as a dual.

Of aorists in *-ην* found only in Homer we have the following forms, *ἔαλη, ἔτμάγην, τερσήμεναι, τάρπημεν, ἀναβροχέν, διατρυφέν*.

Homeric and Attic are *ἔαγην, ἐπάγην, ἐρράγην, ἐφάγην, ἐχάρην, ἐπλήγην, ἐρρύνην*, and others.

Attic alone are among others *ἐγράφην, ἐμάνην, ἐσφάγην, ἐτάκην, ἐτάφην*, etc.

The aorist in *-θην* is a formation modelled upon that of the Aorists in aorist in *-ην*. As from *γράφω* we have *ἐγράφην*, so from **σχέθω, ἐσχέθην*. To explain the *θ* we must turn to the numerous presents in *-θω* (cf. Curt. *Verb.* p. 550), such as *βρίθω, -θην*.

ἀχθομαι, γηθέω, etc. The formation was afterwards extended by analogy, and from Homer onwards became very common. Thus even in Homer the proportion of aorists in -θην to aorists in -ην is that of six to one.

In some instances the two forms stand side by side, e.g. :—

δάμεν : δμηθέντα.

μιγῆναι : μιχθήμεναι, and some others.

The aor. in -θην usually has the present stem in Attic, but the weak form of the root is to be found in Epic τραφθήναι, τάρφθεν, τάθη, etc. In Homer beside ἐκλίθη we find also ἐκλίνθη, beside διέκριθεν, κρινθέντες : in later Greek the forms with the nasal dropped out of use. Similarly in the ἐλάμφθην of Herodotus (Attic ἐλήφθην), the nasal of the present stem has intruded.

-σθην.

The ending -σθην properly belongs to *s* and dental stems, but has been extended to other verbs as well. This phenomenon must be considered along with the perfect pass. (cf. Rutherford, *N.P.* p. 99). The general rule is that 'if the aorist passive has not the sigma the perfect also is without it.' It was a feature of late Greek to introduce sigma improperly, as for instance in the late forms παραβεβασμένος, ἐβάσθην for βεβαμένος and ἐβάσθην.

Redupli-
cated
class.

II. We can now pass on to the second class of verbs, which have a reduplicated verbal stem. The vowel of the reduplication is *u*. This is the third class of the Sanskrit grammarians :—

ἴστημι	Sanskrit <i>ti-ṣṭhāmi</i>	Latin <i>si-sto</i> .
πίμπλησι	<i>pīpartī</i> .	
βιβάς	<i>jīgātī</i> .	
ἴζει	<i>śīlatī</i>	<i>si-lit</i> .
	<i>pībatī</i>	<i>bibit</i> .

Sanskrit disagrees with Greek in having *a* as the vowel of reduplication in—

δίδωμι	<i>dādāmi</i> .
τίθημι	<i>dádḥāmi</i> .

A reduplicated stem is shown in the Homeric δίδω beside δέω.

Greek shows the *ι* vowel of the reduplication further in *μίνω* ($\sqrt{\mu\epsilon\nu}$), *πίπτω* ($\sqrt{\pi\epsilon\tau}$), *ἰσχω* (= *σι-σχω* $\sqrt{\sigma\epsilon\chi}$), *λάχω* ($\sqrt{f\alpha\chi}$), *ἰλλω* (= *φιλλω* $\sqrt{f\epsilon\lambda}$).

An exception in Greek appears in *ἐγείρω*, Sanskrit *jágarimi*.

We find stem variation in—

ἰσᾶ-μι ἰσᾶ-μεν ἰσᾶ-ται, *τίθημι τίθεμεν, δίδωμι δίδομεν*.

(a) With
Stem
variation.

Corresponding to Sanskrit *dadāh-más, dad-más*, we should rather expect *τιθ-μέν, διδ-μέν. τίθεμεν, δίδομεν* have been assimilated to the forms *ἔθεμεν, ἔδομεν*.

In the same way with *ἵημι, ἵεμεν*, the short *ε* of the plural is not original.

In Homer we have *ἵημι*, 'send,' *ἵεμαι*, 'desire.' We have the passive of *ἵημι*, 'to send,' in Δ. 77 *σπινθήρες ἵενται* and χ. 304.

ἵεμαι, meaning 'desire,' has the *ι* always long, e.g. in *οἴκαδε ἱεμένων*, where it also shows traces of an initial consonant now lost. The two verbs are probably from different roots, *ἵημι* $\sqrt{se}$, but *ἵεμαι* $\sqrt{ti}$.

The third plural answering to Sanskrit *dádāh-ati, dád-ati* should be *τίθ-ᾶτι, διδ-ᾶτι*. In Doric the forms are *τίθεντι, δίδουντι* with the same short vowels as *τίθεμεν, δίδομεν*.

On the model of *ἀγνύ-ασι* are the Attic *τιθέ-ασι, διδό-ασι* and *ἰστα-ασι, ἰστᾶσι*. The Ionic *τιθείσι, διδοῦσι* are to be explained by the Doric *τίθεντι, δίδουντι*. The properispomenon accent is irregular.

The conjugation of *τίθημι* and *δίδωμι* has been influenced by the analogy of the contracted verbs. Thus beside *διδούσι*, as though from **διδῶ*, we have *ἐδίδουν, ἐδίδους, ἐδίδου* in the imperf. and *δίδου* in the imperative; beside *τιθείσι* are *τιθείς, ἐτίθεις, ἐτίθει* and imperat. *τίθει* as if from *τιθῶ*. These are the Attic forms (Ruth. *N. P.* p. 316). Porson on *Eur. Or.* 141 condemned *ξυνιείς, τιθείς* of the present indicative on the ground that if these forms were correct we ought also to have *τιθῶ, τιθεῖ, τιθοῦμεν*, etc. But this verb affords an instance of partial and incomplete analogy; it has not been wholly assimilated to the conjugation of the verbs in *-εω*, but only influenced in a few of its forms. In the same way with *δίδωμι* and the verbs in *-οω*. Cf. also Cobet, *Misc. Crit.* p. 282.

Other instances of points of contact between the verbs in -μι and the contracted verbs may be seen in the imperfect ἐδάμνα, ἐκίρνα, πίτνα, κιχείς: in the present indicat. ἀνείς, μεθείς, μεθειῖ, τιθεῖ (the MSS. have usually ἀνείς, etc.), διδοῖς: in the partic. βιβῶντα and in the fem. βιβῶσα (cf. Monro, *H. G.* § 18).

(β) With-
out Stem
variation.

(β) Reduplicated verbs which show no stem variation:—

δίζηναι, διζήμενος (ἀρί-ζηλος, ζη-τέω), and also in Theocritus and late poets, δίζομαι, which has followed the analogy of the thematic conjugation.

κίχημι, κι-χή-την, κι-χή-μενος. In κιχείς and κιχείη the vowel has been shortened according to rule.

πίμπρημι is a present unknown to Homer who has (I. 585) ἐνέπρηθον. We have ἐμπιπρᾶσι (Thuc. 3. 74), πιμπρᾶσι (Eur. *Troil.* 299). The verb stands parallel to πίμπλημι.

πίφρημι is only found in Aristotle's ἐσπιφράναι, but common in Attic are ἐκ-φρες, ἐπ-εισ-φρῶ, δια-φρή-σονται. These point to a variation of the stem and therefore the verb should rather rank in the same class as τίθημι, etc. The √φρη is connected with √φερ of φέρω. With πί-φρη-μι we may compare Sanskrit *bi-bhar-mi* (cf. p. 100).

πίμπλημι is from Homer onwards parallel to πλήθω.

We find πλάθουσι in Aesch. (*Choeph.* 589), but the ε appears to be original; cf. πλήθος, *plenus*, etc. A variation of the stem appears in πίμπλᾶ-μεν, Sanskrit *pīṇr-*, where Greek *lā-* answers to Sanskrit *r-*, (cf. p. 100). But the 1st pers. sing. answering to πιμπλᾶ-, Sanskrit *pīṇr-*, should be πί(μ)πελμι, Sanskrit *pīṇarmi*. Instead of this πί(μ)πελμι, we have πίμπλη-μι as in ἐπλή-μεν, which we are justified in ranking under the head of reduplicated stems without stem variation. The nasal has dropped out in the Homeric ἐμπίπληθι (Φ. 311); cf. ἐμπιπρᾶσι (Thuc. 3. 74 above).

The Epic forms τιθήμενος, τιθήμεναι as well as δίδωθι (γ. 380) are new formations ranking under this head.

Third
Class.

III. The third class of verbs consists of those whose verb-

stem is made up of the weak root + *vū*. This is the Sanskrit fifth class :—

<i>ἄγ-νū-μι</i>	<i>ἄγ-νū-μεν,</i>
corresponding to Sanskrit - <i>nó-</i> , - <i>nu-</i> , e.g. $\sqrt{su}$, (to press out) :—	
<i>su-nó-mi</i>	<i>su-nu-más.</i>

A comparison of Sanskrit -*nó-* and Greek -*vū-* of the strong form points to original Indo-European -*neμ*. This should in Greek be represented by -*νευ-* and so originally we should have -*νευ-μι*, conj. -*νεφα*, impf. -*νεφα* (= *νεφῃ*).

In this way we may explain *κίνυται* beside *κινέω* for *κινέφω* (De Sauss., p. 187). Answering to Sanskrit *ácinavam*, we should have in Greek *ἐκίνεφα*, but through the analogy of the thematic conjugation, we have *ἐκίνεφον* = *ἐκίνουν*.

The 3rd pl. *ἀγνύ-ασι* is for *Fay-vú-ατι*, cf. Sanskrit *çak-nu-vánti*. The *ν* in Greek has remained and has not passed into the consonantal *νf*, in which case *ἀγνυ-ατι* would have become *ἀγνφατι* = *ἀγναντι* = *ἀγνᾶσι*. The Ionic *ἀγνύσι* is a new formation which for form as well as accent may be compared with *τιθεῖσι*. *ἀγνυνται* is likewise a new formation in place of *Fay-vú-αται*, cf. Sanskrit *āp-nuv-átē*.

Other instances of the weak root with suffix -*νυ-* appear in *ῥι-νύμεναι* (Eur. Or. 323), *μῦ-νύ-θω* (with an additional suffix), *τά-νυ-ται*, Sanskrit *ta-nu-té*, cf. with strong stem *τείνω* (*τεν-ιω*).

δείκ-νῦμι, *ζεύγ-νῦμι*, *πήγ-νῦμι* are exceptions to the rule, as they show the strong form of the root. These are not to be regarded as original formations. Some of the presents of this class, e. g. *ζεύγνυμι*, *ἄλλυμι* (for *ὀλ-νυ-μι*), *ἔμνυμι*, *δείκνυμι* are common to all periods of Greek, but the class is mainly Homeric and poetic, e. g. *ὄρνυθι*, *δαίνυ*, *ἄγνυτον*, *στορνῦσα*, *ἀπομόργνυ*, *ἐέργνυ*, *ῥηγνῦσι*, *γάννται*, *τάννται*, *ἦνντο*, *κίνντο*, etc.

The forms in -*αννυμι*, -*εννυμι* are post-Homeric, e. g. *κορέν-νυμι*, *στορέννυμι*, *κεράννυμι*, etc.

Upon the model of *ζώννυμι* (for *ζωσ-νυμι*, cf. *ζωσ-τήρ*), *ἀμφι-έννυμι* (for *ἑσ-νυμι*, cf. *ἑσ-θής*) we have the new formations *ῥώννυμι*, *στρώννυμι*, *ζέννυμι*, *κορέννυμι*, *πετάννυμι*. In the Lesbian dialect, as we have already seen (p. 184), double *νν* is

D d

frequently the result of the assimilation of μ , ν and σ , e. g. $\mu\eta\nu\sigma\sigma$ for $\mu\eta\nu\sigma\sigma$.

In the other dialects the double consonant was simplified and a preceding short vowel was lengthened by compensation (cf. p. 185).

Other instances are to be found in $\alpha\lambda\gamma\epsilon\iota\nu\acute{o}\varsigma$, stem $\alpha\lambda\gamma\epsilon\sigma\text{--}$: $\epsilon\acute{\iota}\nu\nu\mu\iota$ $\sqrt{Fes}$, cf. $\epsilon\sigma\text{--}\theta\acute{\eta}\varsigma$, and $\zeta\acute{\omega}\nu\eta$ $\sqrt{\zeta\omega\varsigma}$, cf. $\zeta\omega\sigma\text{--}\tau\acute{\eta}\rho$.

If these forms are regular, why do we find $\zeta\acute{\omega}\nu\nu\mu\iota$, $\kappa\omicron\rho\acute{\epsilon}\nu\nu\mu\iota$, etc., where the double $\nu\nu$ apparently points to original $\sigma\nu$? In Homer such forms might be explained as Aeolic, for we there find, beside the Ionic $\phi\alpha\epsilon\iota\nu\acute{o}\varsigma$, the Aeolic $\alpha\rho\gamma\epsilon\nu\acute{o}\varsigma$ and $\epsilon\rho\epsilon\beta\epsilon\nu\acute{o}\varsigma$, and so in the same way $\epsilon\nu\nu\mu\iota$ can be regarded as an Aeolic form existing beside the regular Ionic $\kappa\alpha\tau\alpha\epsilon\acute{\iota}\nu\nu\sigma\alpha\nu$ (Ψ . 135, according to the reading of Aristarchus).

Such an explanation will not hold for Attic and Ionic prose, as we do not expect to find Aeolisms there as in Homer. In Herodotus we find $\sigma\beta\acute{\epsilon}\nu\nu\mu\iota$ and $\zeta\acute{\omega}\nu\nu\mu\iota$, but none of the four-syllabled presents in $\text{--}\alpha\nu\nu\mu\iota$, $\text{--}\epsilon\nu\nu\mu\iota$.

De Saussure has explained the doubling of ν as purely rhythmical. Thus $\sigma\kappa\epsilon\delta\acute{\alpha}\text{--}\nu\acute{\nu}\text{--}\mu\acute{\epsilon}\nu$ was altered to $\sigma\kappa\epsilon\delta\acute{\alpha}\nu\nu\mu\epsilon\nu$ to avoid four successive short syllables. But where else shall we find instances of such a rhythmical doubling of consonants in Greek? Besides this, such an explanation only touches forms like $\kappa\omicron\rho\acute{\epsilon}\nu\nu\mu\iota$, $\sigma\tau\omicron\rho\acute{\epsilon}\nu\nu\mu\iota$, which are late, and neglects the early $\zeta\acute{\omega}\nu\nu\mu\iota$ and $\sigma\beta\acute{\epsilon}\nu\nu\mu\iota$.

Brugmann's explanation (*K. Z.* xxvii. 589) is better. The regular forms were $\epsilon\acute{\iota}\nu\nu\mu\iota$ and $\sigma\beta\acute{\epsilon}\iota\nu\nu\mu\iota$, for which last we can compare the gloss of Hesychius, $\zeta\acute{\epsilon}\iota\nu\nu\mu\epsilon\nu$ $\sigma\beta\acute{\epsilon}\nu\nu\mu\epsilon\nu$. But on the analogy of forms where the σ of the root regularly remained, e. g. $\epsilon\sigma\text{--}\sigma\omega$, $\epsilon\sigma\text{--}\sigma\alpha\iota$, $\epsilon\sigma\text{--}\tau\alpha\iota$, $\sigma\beta\acute{\epsilon}\sigma\text{--}\sigma\alpha\iota$, $\epsilon\sigma\beta\acute{\epsilon}\sigma\text{--}\theta\eta\nu$, $\alpha\sigma\beta\epsilon\sigma\text{--}\tau\omicron\varsigma$, $\zeta\omega\sigma\text{--}\tau\acute{\eta}\rho$, the forms $\epsilon\acute{\iota}\nu\nu\mu\iota$, $\sigma\beta\acute{\epsilon}\iota\nu\nu\mu\iota$, $\zeta\acute{\omega}\nu\nu\mu\iota$ became $\epsilon\sigma\text{--}\nu\nu\mu\iota$, $\sigma\beta\acute{\epsilon}\sigma\text{--}\nu\nu\mu\iota$, $\zeta\acute{\omega}\sigma\text{--}\nu\nu\mu\iota$. So with $\sigma\mu$. Beside $\epsilon\acute{\iota}\mu\alpha\iota$, $\epsilon\acute{\iota}\mu\acute{\epsilon}\nu\omicron\varsigma$, where the σ has according to rule disappeared, we find $\eta\mu\phi\acute{\iota}\epsilon\sigma\text{--}\mu\alpha\iota$, $\eta\mu\phi\iota\epsilon\sigma\text{--}\mu\acute{\epsilon}\nu\omicron\varsigma$, $\epsilon\sigma\beta\epsilon\sigma\text{--}\mu\alpha\iota$, $\epsilon\zeta\omega\sigma\text{--}\mu\alpha\iota$, $\epsilon\sigma\text{--}\mu\acute{\epsilon}\nu$, where the σ has again come in before the nasal on the analogy of other forms where it is regular, as e. g. in $\eta\mu\phi\acute{\iota}\epsilon\sigma\text{--}\tau\alpha\iota$ and $\epsilon\sigma\tau\acute{\epsilon}$. But while this revived $\sigma\mu$ remained unaltered, the revived

σν was assimilated to νν, and so we have ξννυμι, σβέννυμι, ζώννυμι.

Upon the model of ζώννυμι were formed the later ῥώννυμι and στρώννυμι. Upon the model of ξννυμι, ἀμφιέννυμι, and σβέννυμι were formed the later κορέννυμι, πετάννυμι.

Thus ἡμφίεσα (σ. 361)

ἡμφιέσμαι (Attic).

ἐκόρεσα (Post-Homeric and poet.) κεκόρεσμαι (late Attic).

ἐπέτασα (ε. 269, etc.)

πεπέτασμαι (Hdt. 1.62),

πέπταμαι (Ep. and Attic).

The similarity of the tenses and the fact that ἀμφιέννυμι was regarded as a simple verb, as is proved by the augment of ἡμφίεσα, led to the analogous formation of the pres. tenses κορέννυμι, πετάννυμι.

The fourth class of verbs consists of those which add on νᾱ, ^{Fourth Class.} νᾱ to the root. They are nearly all confined to Homer, and are non-thematic, e. g. δάμ-νῃ-μι, κίρ-νῃ, περ-νάς, σκίδ-να-ται, πάλ-να-ται, μάρ-να-ται. This is the Sanskrit ninth class.

In the case of κίρ-, σκιδ-, πάλ- we must note the substitution of ι for ε (p. 75).

Variation of the quantity of the suffix is found in—

δάμ-νᾱ-μι

δάμ-νᾱ-μεν.

Compare Sk. *ḡr-nā-mi*

ḡr-ni-mās.

Here we have an unexplained relation between Greek νᾱ and Sanskrit *ni*.

A weak degree of the root is to be found in μάρ-νᾱ-μαι and δῦ-να-μαι. The lengthening of the δν- in Homeric δυνάμενος (α. 276) and Δυναμένη, one of the Nereids (Σ. 43) is purely metrical.

Beside πέρνυμι, πέρναμαι we may set πορνάμεν· πωλεῖν in Hesychius, where πορνάμεν is Aeolic for παρνάμεν (= πρν-), cf. Sanskrit *ḡr-nā-mi*.

Verbs in -ναμι pass over to the conjugation in -νω, just as verbs in -νυμι to the conjugation in -νῶ—πίτνυμι, e. g. πᾶσες to πῖτνάω.

We come now to the second main division of Greek verbs.—^{Thematic Verbs.}

the Thematic conjugation, answering to those Sanskrit verbs which form the present stem by the addition of *a* to the root, and which do not shift the accent to the ending. In Sanskrit this thematic vowel is throughout *a*, in Greek it takes the character of *ε* and *ο*, a variation which is to be regarded as original.

The terminations of these verbs in Sanskrit are the same as those of non-thematic verbs.

Thus φέρ-ω Sanskrit *bhár-ā-mi*.

φέρ-ο-μεν Sanskrit *bhár-ā-mas*.

Thematic vowel in pres.partic. In the present participle midd. Greek generally has *-ο-μενος*, but in certain dialectic forms we find indications of *-ε-μενος*. Thus Delph., Locr. *καλείμενος*, Arcad. *ἀδικήμενος*, Pamphyl. *βωλήμενος*, Elean *καθαλήμενος*. With these forms we may compare the endings of the infinitive in *-ε-μεναι*, *-ε-μεν*, viz. *ἀρχ-έμεναι*, *φέρ-έμεν*, *ληγ-έμεναι*, and such participial forms as *βέλ-εμων*, *τέρ-εμνος*.

Wackernagel (*K. Z.* xxvii. 86) has explained the *η* of the dialectic *ἀδικήμενος*, *βωλήμενος* as arising out of *-ειε-*, just as *βασιλῆης* has come from *βασιλ-ειε-fes* (cf. p. 328). This *ειε* is to be found in the verbs in *-εω*. We may illustrate it by the instances of so-called irregular contraction in Homer—*ἀπειλή-την*, *ὀμαρτή-την*, *καλή-μεναι*, *πενθή-μεναι*, *ποθή-μεναι*, *φιλή-μεναι*, *φορῆ-ναι*, *ἀλιτή-μενος*, *τεροσή-μεναι*. Beside these forms we may set the Aeolic inflexions *φίλη-μι*, *φίλη-μεν*, *φίλεισι* (for *φίλεντι*), *φιλήμενος*, and the Latin *monēmini*, *monēmus*, etc. It is clear that we cannot explain Homeric *ἀλιτήμενος* as a contraction of *ἀλιτε-όμενος*. It is rather a contraction of *ἀλιτε-εμενος* for *ἀλιτ-ειε-μενος*. This is not the regular Greek contraction of *εε*, but must be regarded as an inherited original contraction, as was assumed in the case of the augment, e.g. *ῆα* for *ἐ-εσα* (p. 385).

The question of the contraction of *εε* is complicated by the fact that down to the archonship of Euclides the symbol *ε* in the Attic alphabet had to do duty for the three sounds, *ε*, *ει*, *η*. We do not know at what date the Homeric poems were written down, and how far those who wrote them down were careful to distinguish between the sounds of *η* and *ει*. It is certain at any rate that many forms of the verbs in *-εω* which would in Attic show *ει*, in Homer show *η*, and it is possible that in other instances as well we should in Homer substitute *η* for *ει*. This question will be further considered in dealing with the present stems of the contracted verbs. For the present we are only concerned to emphasize the fact that in the pres. participle midd. the thematic vowel is in some instances *ε*, and not *ο*.

Fifth Class. The fifth class of verbs consists of those thematic verbs whose present stem is formed by the addition of the thematic *ε* and *ο* to the root, whether in a full or a weak form. This

class corresponds to the first class of the Indian grammarians.

Thus *√budh*, to know; pres. stem *bódh-a*.

A. (1) Full forms of the root are to be found in *πλέκω*, *λέγω*, *ὀρέγω*, *στέγω*, *δέχομαι*, *ἔχω*, *βλέπω*, *τρέπω*, *μένω*, *φέρω*, *θέλω*, etc., and where *σ* has dropped out—*ζέω*, *νέομαι*, *τρέω*.

(2) Full forms with a liquid in *δέρκομαι*, *σπέρχω*, *πέρδομαι*, *πέρθω*, *τέρπω*, *ἔλκω*, *ἔλπομαι*, etc.

(3) With a nasal in *φθέγγομαι*, *ἐλέγχω*, *ῥέγχω*, *σπένδω*, *πέμπω*, *μέμφομαι*, etc.

(4) With the semivowel *ι* in *ἐπείγω*, *ἐρείπω*, *λείβω*, *λείπω*, *λείχω*, *νείφει* (unless *νίφει*), *πείθω*, *φείδομαι*, etc.

(5) With semivowel *υ* in *ἐρεύγομαι*, *ἐρεύθω*, *εὔω*, *πεύθομαι*, *σπενδω*, *φενύγω*, *πλέω*, *ῥέω*, *πνέω*, etc.

(6) With *ᾱ*, Ionic and Attic *η*, in *ἦδομαι*, *θήγω*, *λήθω*, *σήπω*, *τήκω*.

(7) With *η* in *ᾠρήγω*, *μῆδομαι*, *λήγω*.

B. The weak root, which is less common, appears in *νίφει* (if not *νείφει*), *γλύφω*, *γράφω*, *ἄγω*, *λίτομαι*, *μάχομαι*, *ἄρχω*, *ἄρδω*, *ἄλθω*, etc.; *βόλομαι*, *ὄθομαι*, *ὄρομαι*, *ἄγχω*, *ἄντομαι*, *βλάβεται*.

The weak form of the root without vowel appears in the aorists *ἔ-σχ-ον*, *πτ-έσθαι*, *περι-πλ-όμενος*, and with the third degree of Ablaut in *κτανεῖν*, *ταμεῖν*, *βαλεῖν*, *παρεῖν*.

These two groups of verbs with full form of the root and verbs with weak form of the root may be distinguished as Imperfect-Presents and Aorist-Presents (cf. p. 231). The majority of thematic presents show in the present stem either *ε* or a corresponding long vowel, that is, they are in the second degree of Ablaut. Such presents as *λέγω*, *τερο*, *φεῖλο*, *τάκω*, *κλώθω*, *ῥῖδο*, correspond to the 1st conjugation class of the Sanskrit grammarians, the members of which have the verbal stem accented, e.g. *bháva*, from *√bhū* (Whitney, *Sk. Gr.* § 606). These are the *Imperfect Presents*, as with these verbs the present stem is identical with the imperfect.

The original Indo-European language had two classes of thematic verb-stems—

(1) With a full root, accented paroxytone.

(2) With a reduced root, accented oxytone.

In Sanskrit we have a series of oxytone thematic present-stems with a reduced root, which constitute the sixth conjugation class of the Hindu grammarians, e. g. *ṣṛjá* from $\sqrt{\text{ṣṛj}}$, *tudá* from $\sqrt{\text{tud}}$. To this class in Greek correspond the presents *γράφω*, *γλύφω*, *λίτessθαι*, etc., with the reduced root but with paroxytone accent. These presents may be called Aorist-Presents, as combining the reduced root of the Aorist stem with the accentuation and endings of the Present. Some of these stems remain as isolated aorists, e. g. *ἐλθεῖν* (and not **ἐλθω*, as *στίχω* from *στιχέιν*). Beside Greek *λακείν* we have the Latin present *loquor*.

In the Greek *γενέσθαι* and *ἐλών* we must notice that though these forms have the full form of the root, yet they have the accent of stems with the weak root, e. g. *λιπεῖν*.

In *ἄρχω*, *ἄγχω*, as in *θάλλω*, *λάμπω*, it is difficult to determine the nature of the present stem, owing to the absence of any criterion for determining the quantity of the *a*. Compared with Sanskrit *áhati* and the Latin *ango* it would seem that the *a* of *ἄγχω* was short, and that the *av-* stands for a nasal sonant.

The *av-* of *aŵ* corresponds to Sanskrit *us-*. Thus we may compare Aeolic *aŵ-ωs* with Sanskrit *us-ás*. The corresponding long stem appears in *εŵω*, Latin *uro*. Perhaps the *a* of *aŵω*, *ἄγχω* and *ἄρχω* is prothetic as in *ἀ-μέλω*¹.

Many of the words comprised in the group of verbs under discussion are not actually to be found in the present indicative, which we only obtain by inference, viz. *ἀπο-δρῦφοι*, *ἀντεσθαι*, *ἦντετο* (? aorist), *αἰθόμενος*, *αἶδετο*, *αἰδόμενος*, *αἶε* (A. 461), *ἔφθιε*, *δίον*, *δίεσθαι*, *ἔκιον*.

To the fifth class belong the verbs whose stem is formed by

¹ We can here mention what is pointed out by De Saussure (*Mém.* 276) that the Arian sonants *i*, *u*, *ḡ*, *ḡ*, *ḡ*, *ḡ*, are represented in Greek in certain instances by a corresponding sonant with a vowel, usually *a*, preceding—

Sk.	<i>u</i>	<i>uta</i>		Gk.	<i>aŵ</i> , <i>aŵte</i> .
	<i>rt</i>		Lat.	<i>aris</i>	Gk. <i>aletrós</i> .
	$\sqrt{\text{uk}}$				Gk. <i>aŵζω</i> .
	<i>us-ás</i>		Lat.	<i>aurora</i>	Gk. Aeol. <i>aŵws</i> .

reduplication of the root, with addition of the thematic vowel ϵ and o . The vowel of reduplication is i : $\gamma\iota\text{-}\gamma\upsilon\text{-}\omicron\mu\alpha\iota$ ($\gamma\acute{\iota}\nu\omicron\mu\alpha\iota$), $\mu\acute{\iota}\text{-}\mu\upsilon\text{-}\omega$, $\iota\sigma\chi\omega$ (for $\iota\sigma\chi\omega$ for $\sigma\iota\text{-}\sigma\chi\text{-}\omega$), $\iota\zeta\omega$ (from $\sigma\iota\text{-}\zeta\delta\omega$, Latin *sido*), $\tau\acute{\iota}\kappa\tau\omega$ (from $\tau\acute{\iota}\text{-}\tau\kappa\text{-}\omega$). The i of $\pi\acute{\iota}\pi\tau\omega$ is not clear, but is probab'y an instance of reduplication: $\pi\acute{\iota}\text{-}\pi\tau\text{-}\omega$, full root $\pi\epsilon\tau\text{-}$. The full root of the other instances is seen in $\acute{\epsilon}\text{-}\gamma\epsilon\upsilon\text{-}\acute{\omicron}\mu\eta\upsilon$, $\mu\acute{\epsilon}\nu\text{-}\omega$, $\acute{\epsilon}\chi\text{-}\omega$, $\sqrt{\sigma\epsilon\delta}$ in $\acute{\epsilon}\zeta\omicron\mu\alpha\iota$ (for $\sigma\epsilon\delta\text{-}\iota\omicron\mu\alpha\iota$), $\acute{\epsilon}\text{-}\tau\epsilon\kappa\text{-}\omicron\upsilon$.

Other instances of reduplication are perhaps $\delta\acute{\iota}\zeta\epsilon$, answering to non-thematic $\delta\acute{\iota}\zeta\eta\mu\alpha\iota$, and $\iota\alpha\upsilon\text{-}\epsilon\iota\varsigma$, Aor. $\acute{\alpha}\epsilon\sigma\alpha$ for $\acute{\alpha}\phi\epsilon\sigma\alpha$; cf. $\alpha\acute{\upsilon}\zeta\omega$ and $\acute{\alpha}\acute{\epsilon}\zeta\omega$ (Monro, *H. G.* § 34).

Other methods of reduplication, either of initial consonant with ϵ , or else the so-called Attic reduplication, are to be found in the Homeric reduplicated aorists, mostly causative in meaning: $\acute{\epsilon}\kappa\text{-}\lambda\acute{\epsilon}\text{-}\lambda\alpha\theta\omicron\upsilon$, $\kappa\epsilon\text{-}\kappa\alpha\delta\acute{\omega}\nu$, $\kappa\epsilon\text{-}\chi\acute{\alpha}\rho\omicron\upsilon\tau\omicron$, $\acute{\alpha}\mu\text{-}\pi\epsilon\text{-}\pi\alpha\lambda\acute{\omega}\nu$, $\tau\epsilon\text{-}\tau\alpha\gamma\acute{\omega}\nu$, $\acute{\epsilon}\zeta\text{-}\acute{\eta}\pi\text{-}\alpha\phi\epsilon$, $\acute{\eta}\rho\text{-}\alpha\rho\epsilon$, $\acute{\eta}\kappa\text{-}\alpha\chi\epsilon$, $\acute{\epsilon}\text{-}\sigma\pi\omicron\iota\tau\omicron$, $\acute{\epsilon}\text{-}\pi\acute{\epsilon}\text{-}\phi\upsilon\mu\epsilon\upsilon$, $\kappa\acute{\epsilon}\text{-}\kappa\lambda\epsilon\tau\omicron$, $\pi\epsilon\text{-}\pi\upsilon\theta\omicron\acute{\iota}\omicron\alpha\iota\tau\omicron$, $\tau\epsilon\text{-}\tau\acute{\alpha}\rho\pi\epsilon\tau\omicron$, $\lambda\epsilon\text{-}\lambda\alpha\beta\acute{\epsilon}\sigma\theta\alpha\iota$, $\pi\epsilon\text{-}\pi\acute{\iota}\theta\omicron\iota\mu\epsilon\upsilon$, $\pi\epsilon\text{-}\phi\acute{\iota}\delta\acute{\epsilon}\sigma\theta\alpha\iota$, $\pi\acute{\epsilon}\text{-}\phi\tau\alpha\delta\epsilon$, $\acute{\alpha}\lambda\text{-}\alpha\lambda\kappa\epsilon$, $\tau\epsilon\text{-}\tau\acute{\upsilon}\kappa\omicron\upsilon\tau\omicron$.

In $\acute{\epsilon}\text{-}\tau\epsilon\text{-}\tau\mu\epsilon$, $\acute{\epsilon}\iota\pi\omicron\upsilon$ the ϵ of the root has disappeared. The only reduplicated aorists in Attic are $\acute{\eta}\gamma\text{-}\alpha\gamma\omicron\upsilon$ and $\acute{\epsilon}\iota\pi\omicron\upsilon$. There is a difficulty in the explanation of $\acute{\epsilon}\text{-}\epsilon\iota\pi\omicron\upsilon$, $\acute{\epsilon}\iota\pi\omicron\upsilon$ over against Sanskrit $\acute{a}\text{-}v\acute{o}\bar{c}\text{-}am$, from the Indo-European $\sqrt{\mu\epsilon q}$. On Old Attic inscriptions $\acute{\epsilon}\iota\pi\omicron\upsilon$ has the genuine diphthong $\epsilon\iota$ (as distinguished from the $\epsilon\iota$ of compensatory lengthening which was written ϵ), and with this agrees the Lesbian $\phi\acute{\epsilon}\lambda\pi\eta\upsilon$ (Alcaeus). The Greek form answering to Sanskrit $\acute{a}\text{-}v\acute{o}\bar{c}\text{-}am$ ($=a\text{-}va\text{-}uc\text{-}am$) will be $\acute{\epsilon}\text{-}\phi\epsilon\text{-}\phi\pi\text{-}\omicron\upsilon$, the Indo-European form of which was $a\text{-}\mu\epsilon\text{-}\mu q\text{-}am$, where the e of the full $\sqrt{\mu\epsilon q}$ has disappeared, and the form stands on the same footing as $\acute{\epsilon}\sigma\pi\acute{\epsilon}\sigma\theta\alpha\iota$ ($=\sigma\epsilon\text{-}\sigma\pi\text{-}\epsilon\sigma\theta\alpha\iota$), in which we find the same weakened root syllable.

It is doubtful whether this class of reduplicated stems had in early Greek a present tense, for $\acute{\epsilon}\sigma\pi\epsilon\tau\alpha\iota$ (δ . 826) is disputed, and $\acute{\epsilon}\zeta\omicron\mu\alpha\iota$ (if accepted) can stand for $\sigma\acute{\epsilon}\delta\iota\omicron\mu\alpha\iota$ rather than $\sigma\epsilon\text{-}\zeta\delta\text{-}\omicron\mu\alpha\iota$. In Alexandrian times we find such presents as $\pi\acute{\epsilon}\phi\upsilon\omega$, $\kappa\acute{\epsilon}\kappa\lambda\omicron\mu\alpha\iota$.

Peculiar reduplications appear in the Homeric $\acute{\eta}\rho\acute{\upsilon}\kappa\alpha\kappa\epsilon\upsilon$ and $\acute{\eta}\nu\acute{\iota}\pi\alpha\pi\epsilon$.

Sixth
Class.

In the sixth class the present stem consists of the root and the suffixes -ι-ο-, -ι-ε-, a common type in all Indo-European languages. The corresponding Sanskrit class is the fourth class of the grammarians, where the present stem is formed by the addition of *ya* to the root.

(1) The suffix is added on to a root ending in a guttural : αἰσσω (αἶξ), πτύσσω (πτύχες), δράσσομαι (δραχμή), τάσσω (τάξις), etc. : νίζω from a root ending in a velar guttural (√*nig* ; cf. νίπ-τρον and χέρ-νιβ-α), σφάζω (σφαγή), στίζω (στίγμα), κρίζω, στάζω, κλώζω, etc.

(2) The suffix is added on to roots ending in a nasal, as in βαίνω (here the root originally ended in *m*), μαίνομαι, φαίνω, καίνω, and Lesb. κταίνω.

(3) The suffix is added on to a root ending in a liquid in ἄλλομαι, βάλλω, πάλλω, ἀσπαίρω, σκαίρω.

If αἶρω is from ἀείρω and εἰ is a genuine diphthong, then we should expect in Attic ἄρω, just as ᾗδω for ἀείδω : if, on the other hand, εἰ is the result of compensatory lengthening (ἀείρω = ἀερίω), then we should expect ᾗρω by contraction, just as τιμᾶν for τιμάειν. αἶρω is perhaps a parallel form to ἀείρω (= ἀφείρω), and stands for *F_g-iō* (without prothetic *a*) = *Fap_iω* = αἶρω.

All the above instances have the weak form of the root ; so has Doric φθαίρω. The form ῥέζω is for *Fράζω*, but has been assimilated to ἔρδω, which has the full root.

The ε degree of the full root is seen in κτείνω, ἀείρω, φθείρω (Lesb. κτέννω, φθέρρω, etc., cf. p. 184), στέλλω, τείρω, ἐγείρω, but whether the full root is original in this particular class of verbs must remain doubtful. It may have been extended from the fut. and aor. κτενῶ and ἔκτεννα, ἔκτεινα, or it may have been due to the analogy of such verbs as φέρω.

The similarity of σφάζω, ἔσφαξα to φράζω, ἔφραξα, led to the formation of the present σφάττω, like φράσσω, φράττω, side by side with σφάζω, although the root of σφάζω is σφαγ-, and of φράσσω, φρακ-. In the passive aorist the guttural media appears, as in ἐσφάγ-ην, ἐφράγ-ην (late), ἐπλήγ-ην, ἐτάγην, even when the presents are σφάττω, φράσσω, πλήσσω, τάσσω.

Perhaps the change from the tenuis κ to the media γ is due to the example of such forms as $\acute{\epsilon}\acute{\alpha}\gamma\text{-}\eta\nu$ from $\acute{\alpha}\gamma\text{-}\nu\mu\iota$, $\acute{\epsilon}\lambda\acute{\epsilon}\gamma\eta\nu$ from $\lambda\acute{\epsilon}\gamma\omega$, where the γ is an actual part of the present stem and verbal root.

Under this class of verbs come $\delta\acute{\iota}\omega$ and $\delta\acute{\iota}\omicron\mu\alpha\iota$, Sanskrit $dī\text{-}yā\text{-}mi$. The forms $\delta\acute{\iota}\epsilon\tau\epsilon$, $\delta\acute{\iota}\epsilon\tau\alpha\iota$, $\delta\acute{\iota}\epsilon\sigma\theta\alpha\iota$, in consequence of their association with the similar $\acute{\iota}\epsilon\tau\epsilon$, $\acute{\iota}\epsilon\tau\alpha\iota$, $\acute{\iota}\epsilon\sigma\theta\alpha\iota$, led further to the formation of $\acute{\epsilon}\nu\delta\acute{\iota}\epsilon\sigma\alpha\nu$, $\delta\acute{\iota}\epsilon\mu\alpha\iota$, $\delta\acute{\iota}\epsilon\nu\tau\alpha\iota$, upon the model of $\acute{\iota}\epsilon\sigma\alpha\nu$, etc.

The present stem is in other instances composed of the reduplicated root with the suffixes $-\acute{\iota}\omicron$, $-\acute{\iota}\epsilon$.

The vowel of the reduplication is $\acute{\iota}$ in $\tau\acute{\iota}\tau\alpha\acute{\iota}\nu\omega$ ($=\tau\acute{\iota}\text{-}\tau\eta\grave{\gamma}\text{-}\acute{\iota}\omega$), $\lambda\acute{\iota}\lambda\alpha\acute{\iota}\omicron\mu\alpha\iota$ ($=\lambda\acute{\iota}\text{-}\lambda\alpha\sigma\text{-}\acute{\iota}\omicron\mu\alpha\iota$).

By other methods of reduplication we have $\gamma\alpha\rho\text{-}\gamma\alpha\acute{\iota}\rho\omega$ ($\gamma\alpha\rho\text{-}\gamma\alpha\rho\acute{\iota}\omega$), $\mu\alpha\rho\text{-}\mu\alpha\acute{\iota}\rho\omega$, $\pi\omicron\rho\text{-}\phi\acute{\upsilon}\rho\omega$, $\mu\omicron\rho\text{-}\mu\acute{\upsilon}\rho\omega$, $\beta\alpha\mu\text{-}\beta\alpha\acute{\iota}\nu\omega$, $\pi\alpha\mu\text{-}\phi\alpha\acute{\iota}\nu\omega$, $\delta\alpha\iota\text{-}\delta\alpha\acute{\lambda}\lambda\omega$, $\pi\alpha\iota\text{-}\pi\acute{\alpha}\lambda\lambda\omega$, $\pi\alpha\iota\text{-}\phi\acute{\alpha}\sigma\sigma\omega$, $\pi\omicron\iota\text{-}\phi\acute{\upsilon}\sigma\sigma\omega$, $\acute{\alpha}\text{-}\acute{\iota}\sigma\sigma\omega$ (for $F\alpha\iota\text{-}F\acute{\iota}\kappa\acute{\iota}\omega$). These forms mostly have an intensive signification. Some of them may be denominatives, as, for instance, $\delta\alpha\iota\delta\alpha\acute{\lambda}\lambda\omega$ may be from $\delta\alpha\acute{\iota}\delta\alpha\lambda\omicron\varsigma$.

Under the sixth class we may also reckon the denominatives, whose present stem is formed by the addition of the suffixes $-\acute{\iota}\omicron$, $-\acute{\iota}\epsilon$ to a nominal base. Thus $\omicron\acute{\iota}\kappa\acute{\epsilon}\omicron\mu\epsilon\nu$ is for $\omicron\acute{\iota}\kappa\epsilon\text{-}\acute{\iota}\omicron\text{-}\mu\epsilon\nu$.

The denominatives in $-\acute{\alpha}\omega$, $-\acute{\epsilon}\omega$, $-\acute{\iota}\omega$, $-\nu\omega$ seem to be the most ancient formations, while those in $-\omicron\omega$, $-\acute{\epsilon}\nu\omega$ are newer. Examples are $\tau\acute{\iota}\mu\acute{\alpha}\text{-}(\acute{\iota})\omega$, $\phi\acute{\iota}\lambda\acute{\epsilon}\text{-}(\acute{\iota})\omega$, $\mu\eta\nu\acute{\iota}\text{-}(\acute{\iota})\omega$, $\delta\alpha\kappa\rho\acute{\upsilon}\text{-}(\acute{\iota})\omega$ of the earlier, and $\chi\rho\nu\sigma\acute{o}\text{-}(\acute{\iota})\omega$, $\beta\alpha\sigma\iota\lambda\acute{\epsilon}\acute{\upsilon}\text{-}(\acute{\iota})\omega$ of the later formation. We have already spoken (p. 404) of the contraction of $\acute{\epsilon}\acute{\iota}\epsilon$ to η in the Homeric $\phi\omicron\rho\eta\text{-}\nu\alpha\iota$, $\acute{\alpha}\lambda\iota\tau\acute{\eta}\text{-}\mu\epsilon\nu\omicron\varsigma$ from verbs in $-\acute{\epsilon}\omega$. The long $\acute{\alpha}$, Ion. η , of the verbs in $-\acute{\alpha}\omega$ is to be explained as a prehistoric contraction of $\alpha\acute{\iota}\epsilon$, as, for instance, in the Homeric $\sigma\upsilon\nu\alpha\nu\tau\acute{\eta}\text{-}\tau\eta\nu$, $\sigma\upsilon\lambda\acute{\eta}\text{-}\tau\eta\nu$, $\phi\omicron\iota\tau\acute{\eta}\text{-}\tau\eta\nu$.

These forms must be considered in connexion with the Aeolic dialect where we find $\acute{\kappa}\acute{\alpha}\lambda\eta\mu\iota$, $\phi\acute{\iota}\lambda\eta\mu\iota$, $\delta\eta\rho\eta\mu\iota$, the optat. $\phi\acute{\iota}\lambda\acute{\epsilon}\eta\nu$, the part. act. $\phi\acute{\iota}\lambda\epsilon\iota\varsigma$, and midd. $\phi\acute{\iota}\lambda\acute{\eta}\mu\epsilon\nu\omicron\varsigma$ (cf. p. 404): the question is, did these forms belong originally to the $-\mu\iota$ conjugation or to the thematic conjugation? Brugmann

(*M. U. i.* 85) regards the inflexion of φιλέω as the older, while the Aeolic φάλημι is due to the analogy of such verbs as ἄημι, δίζημαι, and the aor. ἐβλήην.

Comparing Aeolic φάλη-μεν with ἄη-μεν,
 φάλη-ται with ἄη-ται,
 φιλείην with αείην, κιχείην,
 φιλήναι with ἄηναι,
 φιλήμενος with ἀήμενος,
 ἐδοκίμων with ἔγνων,
 ἐγέλαν with ἔδραν, etc.,

we see that it was from such verbs in -μι as ἄημι that the new inflexion for the contracted verbs was introduced. Curtius (*Verb. i.* 352) long ago remarked the agreement between the Homeric φοιτή-την, φορῆ-ναι, ἀλιτή-μενος, and such forms as κιχή-μεναι, ἀή-μεναι. It is no great extension of this to explain the Aeolic φιλήμενος, etc., from the forms of ἄημι.

Another proof that we need not regard the Aeolic forms of the contracted verbs as original is to be found in the fact that other verbs not belonging to this class were drawn into the inflexion of verbs in -μι. Thus we find οἶδημι¹ for οἶδα, and here we have no doubt that οἶδα is the more original formation.

The Homeric forms τιθήμενος, τιθήμεναι, δίδωθι conform to the type of the inflexions ἀήμε-ναι, ἀή-μενος.

Other denominatives belonging to the sixth class are τεκταίνω for τεκτῆϊω from τέκτων, θωρήσσω from θώρηξ, ἀρπάζω from ἄρπαξ, ἐλπίζω from ἐλπίς, Epic τελείω for τελεσ-ῖω from τέλος.

In many cases the nominal stem does not justify the verbal derivatives. Thus from ἄριστον we have ἀριστ-άω, from μάντις μαντεύομαι, from κέρδος κερδαίνω.

The endings -αζω, -ίζω are especially luxuriant. These properly belong to derivative verbs from stems ending in a guttural or dental, but for all that we have such verbs as δικ-άζω, νομ-ίζω, χαρ-ίζομαι, which are derivatives from the

¹ οἶδα αἰολικῶς οἶδημι λέγεται, *Et. Mag.* 618. 55, also Hesychius.

stems of *δίκη*, *νόμος*, and *χάρις*. The probability is, that in the case of these verbs, as in the case of *μειλίσσω* beside *μείλιχο-ς*, *ἀγγέλλω* beside *ἀγγελο-ς*, *ἐχθαίρω* beside *ἐχθρό-ς*, the irregular result was brought about by the influence of the analogy of those verbs which were actually derived from nominal stems ending in a consonant, viz. *κηρύσσω*, *ποιμαίνω*, *ἀνάσσω*, *ἐλπίζω*, *μαστιζώ*, etc. In part, too, the formations were influenced by those verbs which were not denominatives, such as *φράσσω*, *βαίνω*, *βάλλω*, *ἀσπαίρω*, *φράζω*, etc.

Occasionally we have doublets—

ἀγαπάω	ἀγαπάζω.
ἀνιάω	ἀνιάζω.
ἀτιμάω	ἀτιμάζω.
αἰνέω	αἰνίζομαι.
καλέω	προκαλίζετο.
ὀπλέω	ὀπλίζω, etc.

The *ι* of the verbs in *-ίζω* is probably due to the stems in *ι*, as for instance *ὑβρίζω* from *ὑβρις*, and this ending has been extended to all members of the class. But in the Homeric *ἀκηχίδαται*, *μυγεδ-ανός* we appear to have indications of a formation in *-εζω* for *-εδιω*, e. g. **ἀχεζω* and **μυγεζω*. In that case *προκαλίσσατο* would be a more ancient form of the aor. than the form *προῦκαλίσατο*, as pointing to a present *προκαλίζομαι*. (Cf. Monro *H. G.* p. 316.)

In considering irregular denominatives we must remember that the process was assisted by the fact that certain functions were associated with certain endings. This would explain why some denominatives did not follow the path prescribed by the nominal stem.

Thus the verbs in *-οω* are mainly derived from adjectival *O*-stems, and have a causative or factitive meaning, e. g. *γυμνῶω*, *ισθῶω*, *κακόω*, *μονῶω*, *ὁμοιῶω*, *ὀρθῶω*.

Some others, viz. *ὑπνῶω*, *χολῶω*, *πτερόω* come from substantives, but their meaning is the same.

Verbs in *-αω* come mainly from noun stems in *ᾱ*, and usually denote the exercise of some activity or the existence of some state, viz. *ἀγαπάω*, *αὐδᾶω*, *βοᾶω*, *ἡβᾶω*, *νικάω*. Later formations which preserve the same sort of meaning are *νανσιᾶω*, *ὠχριᾶω*, *κλαυσιᾶω*.

The verbs in *-εω* are in meaning much less definitely contrasted with the verbs in *-αω* than with the verbs in *-οω*. To judge from the Latin doublets

<i>albare</i>	<i>albēre</i> ,
<i>clarare</i>	<i>clarēre</i> , etc.,

we may conjecture that the transitive meaning is more special to the *ā*-conjugation, the intransitive to the *ē*-conjugation. In Greek, at any rate, the verbs in *-εω* and *-ιζω* are mainly intransitive. They are also largely derived from abstract substantives of the *O*-declension, e. g. *αἶνος*, *ἄθλος*, *γάμος*, *κόσμος*.

We can thus see that as the several verbal endings expressed different functions, the process of derivation might become irregular. Thus, in spite of *γέφυρα*, we have *γεφυρώ* : on the other hand, from *λωβή*, *τελευτή*, we have *λωβάομαι*, *τελευτάω* (sometimes), with the causative meaning of the verbs in *-οω*. It may be in some instances that the *O*-stem from which the verb in *-οω* is derived has been lost, e. g. *κορυφοῦσθαι* might come from a *κόρυφος* existing side by side with *κορυφή*.

The starting-point of the verbs in *-εω* is the noun stem in *-ευ-*. But few of the existing verbs in *-εω* can be referred to such a stem. Thus there are noun stems in *-ευ-* answering to the verbs *ἀριστεύω*, *βασιλεύω*, but none answering to *ἀρχεύω*, *θηρεύω*, *βουλεύω*, *παιδεύω*, *πιστεύω*. The difficulty is lessened by observing that in Homer an *O*-stem is often altered into a *ευ*-stem in declension, as, for instance,

<i>ἡνίοχος</i>	but	<i>ἡνιοχῆα</i> and <i>ἡνιοχῆες</i> .
<i>οὔρος</i>	but	<i>οὔρήων</i> .
<i>πομπός</i>	but	<i>πομπῆες</i> .

Seeing, then, that *nomina agentis* in *-ο-* might have a *by*-stem in *-ευ-*, it becomes easier to explain the occurrence of verbs in *-εω* which can be referred to no corresponding noun stem in *-ευ-*. To explain *ικετεύω*, for instance, we must suppose *ικετευ-*, as well as the stem of *ικέτης*.

The meaning of verbs in *-εω* was to conduct or behave oneself after the fashion of some person or other who was denoted by the noun with the stem in *-ευ-*. Thus *βασιλεύω*

means to behave like a βασιλεύς. The need of verbs to express this meaning swelled the list of verbs in -ενω. In use they come nearest to the verbs in -εω, and this explains the constant interchange between the two classes, as, for instance, in ζητεύω and ζητέω, οἰνοχοεύω and οἰνοχοέω. (Cf. Curt. *Verb*, p. 252.)

With the sixth class we may take the verbs whose present stem Causatives. is made up of a root with full degree and the suffixes -ειο- and -ειε-: their meaning is causative: they correspond to the Hindu tenth class with suffix -άγα-¹. Instances are φοβέω (beside φέβομαι), ὀχέω, σοβέω, σοέω, τροπέω, φορέω. Originally these verbs were distinguished from the similar denominatives by a difference of accentuation. In Greek there is no difference of accent and no distinction of form between the causatives and the denominatives, and so it seems best to rank them in the same class.

In Latin we can compare the denominative *albeo* with the causatives *moveo* and *noceo*.

The seventh class is composed of verbs whose present stem Seventh Class. consists of the root with the suffixes -το and -τε.

It is open to doubt whether the verbs so formed should form a separate or whether they do not really belong to our sixth class, that is, where the present stem consists of the root and the suffixes -ιο, -ιε. There are the aorists ἔβλασ-τον, ἤλι-τον (cf. ἡλίθιος), ἤμαρ-τον, ἤμβρο-τον Ep., and the Attic ἀνύ-τω. The verb πέκτω (Attic πεκτείν, Ar. *Av.* 714, Lat. *peccto*) is only known to us from the lexicographers. Apart from this instance we find in the present stem a labial, and in almost all certain cases that labial is π. In the case of such denominatives as ἀστράπτω, χαλέπτω we have no other explanation of their origin than to assume the form χαλεπ-ιω, ἀστραπ-ιω. Is there any other explanation for such a verb as τύπτω? We may conclude that where the root does actually end in π the suffix was -ιο, viz. τυπιω, σκαπιω = τύπτω, σκάπτω. But where the

¹ Whitney (*Sk. Gr.* § 607) regards this as a derivative conjugation and not as a separate present-system.

root ended originally in a guttural, as is the case with πέπτω, √*peq*, cf. Lat. *coquo*, with the Homeric ἐνίπτω beside ἐνίσσω, and νίπτω beside νίζω, cf. χέρ-νιβ-α (with the root ending in the velar guttural *g*), in these verbs we cannot suppose suffixes -ιο, -ιε added to the root. Nor will the explanation which is satisfactory for τύπτω hold in cases where the root ends in β or φ, as in βλάπτω beside βλάβη, καλύπτω beside καλύβη, βάπτω beside βαφή, κρύπτω beside κρύφα, etc.

It is possible that, though κρύπτω, βάπτω cannot be explained by κρυφ-ιω, βαφ-ιω, or βλάπτω by βλαβ-ιω, all these presents are new formations upon the analogy of τύπτω and those verbs whose roots ended in π. Just as the similarity of ἔσφαξα from σφάζω and ἔφραξα from φράττω led to the formation of a later σφάττω, so the similarity of ἔβλαψα, ἔκρυψα, and ἔτυψα (N. 529), may have brought about a corresponding similarity in the formation of the presents. In πέπτω, ἐνίπτω, νίπτω beside πέσσω, ἐνίσσω, νίζω, we cannot assume any such analogy, but must rest content with the addition of the suffixes -το, -τε.

The verb σκέπ-τομαι does not come from *σπεκ-τομαι, but from σπεκ-ιομαι (from which σκεπ-ιομαι), Lat. *spec-io*, Sk. *prágyāmi*. The strange metathesis of π and κ may perhaps be due to the analogy of the root σκoF- in (θυ)σκόφος, which has a similar meaning, and which appears without the σ in Λαο-κόων and the Lat. *cav-eo*, *cau-tus*.

Eighth
Class.

In the eighth class, the present stem is made up of the verb stem with the root in the low degree and the suffixes -σκο-, -σκε-. E.g. βάσκω, I.-E. *gh-skō*, χάσκω, φάσκω, βόσκω. From these verbs the suffix was extended to polysyllabic verbal stems, γηρά-σκω, ἡβᾶ-σκω, γενειᾶ-σκω, ἰλᾶ-σκομαι, μεθῶ-σκω, κορέ-σκω, ἀρέ-σκω. Beside these we may set the Ionic iterative preterites, φεύγεσκε, ἐρίζεσκον, αἰδήσασκε, φάνεσκε. Like φά-σκον (φημί) was formed ἴστασκον (ἴστημι), καλέσκετο like κορέσκω and ῥίπτασκον (ῥιπτάζω), just as γενειάσκω (γενειάζω), etc. These iteratives differ from the presents in having distinctly the notion of repeated action

and in being confined to the past time. Even *ἔφασκον* has sometimes an iterative meaning (θ. 565), and the present *φάσκω* does not occur in Homer.

In Latin as in Greek we can distinguish in the same way between the regular inceptives, viz. *liquesco*, *puerasco*, and the presents, such as *pasco*, *proficiscor*, where the inceptive meaning is scarcely perceptible.

The verbal stem with a long vowel is found in *γι-γνώ-σκω*, *γνῶ-σco*, *βιβρώσκω*, *τιτρώσκω*, etc.

In *θνήσκω*, *βλώσκω* we may still suppose the weak degree of the root, as the long vowel represents an originally long nasal sonant. Thus *θῆσκω* and *βῆσκω*, just as *στρωτός* for *στῆτος* (cf. p. 234).

Under this class are comprised those stems which, like the last, add on the suffixes *-σκο*, *-σκε*, but in which the verb stem is also reduplicated.

1. Where *ι* is the vowel of reduplication, as in *δι-δάσκω*, *τι-τύσκομαι*, *γι-γνώσκω*, *μι-μνήσκω*, *δι-δράσκω*, *κί-κλησκειν*, *πί-φανσκει*.

2. With other modes of reduplication, *ἐ-ίσκω*, *δειδίσκομαι*, and with insertion of *ι* in the verbal stem, *ἀπαφ-ί-σκει*, *ἀρ-ἀρ-ι-σκει*.

A final consonant is lost before *σκ* in *δι-δασκέ-μεν* for *δι-δαχ-σκε-*, *ἐ-ίσκω* (cf. *ἔκ-ελος*) for *ἐ-φικ-σκω*, *τι-τύσκε-το* (*τυκ-οι τυχ-*), and perhaps also *μίσγον* for *μιγ-σκον*, *πάσχω* for *παθ-σκω*.

Homeric *δειδίσκομαι*, Att. *δεδίσκομαι* (Ar. *Lys.* 564), is for *δε-δφικ-σκο-μαι*, cf. *δεῖδοικα*, *δέδοικα*, for *δέδφοικα*. In *δειδίσσεσθαι*, *δεδίττεσθαι*, *κη* has passed to *σσ* and *ττ*.

The termination *-ισκω* comes in Homeric *ἀπαφίσκω*, *ἀραρίσκω*, and in *εὐρίσκω*, as well as in later *ἀλ-ίσκομαι*, *ἀνᾶλίσκω*, *στέρίσκω*. It is even added on to a vowel stem in *χρητίζκομαι* (Hdt. 3. 117). The origin of this *ι* is unexplained.

The Ionic-Attic *θνήσκω*, Aeol. *θναίσκω*, *θρῶσκω*, and *μμ-νήσκω* (cf. Curt. *Verb.* 190), have followed the analogy of verbs in *-ισκω*, viz. *εὐρ-ίσκω* and added an iota.

The ninth or nasal class. — In these verbs the present

Ninth
Class.

stem is made up of the root with suffixes *-vo* and *-νε*, or of the root sometimes nasalised and suffixes *-ανο-*, *-ανε-*.

δάκ-νω ληθ-άνω λανθ-άνω λιμπ-άνω.

For the nasalisation of the root we may compare the seventh class of the Hindu grammarians.

The presents in *-νω* may probably be due to transference into the thematic conjugation of non-thematic verbs which added on the suffix *-να* to the root (fourth class). Analogies exist in other languages, but it is possible that they may be the separate growths within the limits of the several languages.

In the verbs in *-ανω*, if the root syllable is short, a nasal is inserted; otherwise there is no nasal, and the root should be full. Compare *λανθ-άνω* and *ληθ-άνω*.

Weak root with nasal appears in *ἀνδ-άνω*, *λαγχ-άνω*, *χανδ-άνω*, *πυνθ-άνομαι*, *τυγχ-άνω*, *λαμβ-άνω*, etc.

Without nasal in the root there are *ἀμαρτάνω* beside *ἡμαρτον*, *κευθάνω* beside *κεύθω*, and post-Homeric *αἰσθάνομαι*, *βλαστάνω*, *δλίσθάνω*, etc.

With reduplication, *-ανο-* appears in *πιμ-πλάνεται*, *ισχάνω*, *ιζάνω*.

In other verbs of the nasal class the present stem is composed of the weak root with suffixes *-νfo*, *-νfe*.

Homeric *φθάνω*, *φθίνω*, *ᾄνω* (but only in Arsis), Attic *τίνω*, *φθᾶνω*, *φθίνω*, for original *φθανfw*, *φθινfw*, *ᾄνfw*, *τινfw*.

Beside *ᾄνfw* we may set *ἦνυτο* Sk. *sa-nó-mi*.

φθίνfw „ „ *φθι-νύ-θω*.

τίνfw „ „ *τι-νύ-μεναι*,

δρίνω, Lesb. *δρίννω*, points to *δρίνfw*, and the long vowel of Epic *δύνω*, *θύνω* to *δύνfw*, *θύνfw*. For the loss of the *f* without compensatory lengthening in Attic *φθᾶνω*, etc., we may compare *ξένος*, *μόνος*, *κόρη*, *ὄλος*, etc.

To this class belong Homeric *κιχάνω*, Att. *κιγχάνω*, a new formation with nasalisation of the first syllable, side by side with aor. *κιχῆναι*, which belongs to the second class.

Homeric *ικάνω* (= *ικανfw*) is also a new formation after the model of *φθάνω*, *ᾄνω*.

Under the third class we have spoken of the transference of verbs in *-ννμι* into the thematic conjugation *-νω*, as, for instance, *ἤνντο* but *ἀνύω*, and under this tenth class comes *ἄνω* for *ἄννω*, pointing to an original *-ννο*. Beside verbs like *ἀνύ-ω* we have verbs with the fuller suffix *-νευ-*, which passes to *-νεω*, *-νεω*, as in *κινέω* (for *κινεω*) beside *κινυται*, *ἀγινέω*, and *δινέω*, and these verbs are then conjugated like the ordinary contracted verbs in *-εω* which come from *-ειω*.

The stem of the Perfect appears in Greek in all the moods of The Perfect. the active and middle voice, and also in the augmented Pluperfect. Its characteristics are reduplication, the person endings, and a special root form with a distinction into strong and weak varieties; but these characteristics have often been obscured by later formations in the history of the Greek language.

In stems which have an initial consonant the vowel of the Reduplication. reduplication is *ε*, as in *γέ-γona*, *δέ-δορκα*, *λέ-λοιπα*, *πε-φύᾱσι*, etc. The origin of this *ε* is to be referred to the Indo-European primitive language, and in preserving it the languages of Europe have remained truer to the original than the Asiatic languages. In Sanskrit, where the root contains *i* or *u*, the vowel of reduplication is *i* or *u*. Latin also shows a reduplication with assimilation to the vowel of the root in *momordi*, *porosci*; older *memordi*, *peposci* (cf. p. 455).

It has been supposed that *η* sometimes appears as the vowel of the reduplicated syllable, but there is no sure instance of this. It is possible that *ἑώρακα* is by metathesis of quantity for *ἡώρακα*, but the correct form is *ἑώρακα*. So too *ἑάλωκα* (not *ἡάλωκα*) and *εἴργασμαι* (imperf. *ἤργαζόμεν*) are the correct forms of those perfects. From *εἰκάζω* the aor. is *ἤκασα*, the perfect *εἵκασμαι*. Wherever in such cases the MSS. show *ε* for the aorist and *εω* or *η* for the perfect we have the result of later confusion.

(1) In roots beginning with a single consonant, the syllable of reduplication consists of this consonant with *ε*, as in *δέ-δορκα*: or where the root begins with an aspirate, of the corresponding tenuis with *ε*, as in *τέθεικα*.

(2) Where the root had two initial consonants, the first consonant with ϵ was the syllable of reduplication if the consonants were a mute and a nasal or liquid, as in $\gamma\epsilon\gamma\rho\alpha\pi\tau\alpha\iota$, $\tau\epsilon\theta\nu\eta\kappa\alpha$. To this $\epsilon\gamma\nu\omega\kappa\alpha$ is a constant exception, and $\epsilon\beta\lambda\acute{\alpha}\sigma\tau\eta\kappa\alpha$ stands beside $\beta\epsilon\beta\lambda\acute{\alpha}\sigma\tau\eta\kappa\alpha$.

In other cases of two consonants it was usual to prefix ϵ only, as in $\epsilon\kappa\tau\eta\mu\alpha\iota$ (usually $\kappa\acute{\epsilon}\kappa\tau\eta\mu\alpha\iota$), $\epsilon\zeta\epsilon\nu\gamma\acute{\mu}\epsilon\nu\omicron\varsigma$, $\epsilon\psi\epsilon\nu\sigma\mu\alpha\iota$, but regularly $\mu\acute{\epsilon}\mu\nu\eta\mu\alpha\iota$. The prefix of ϵ alone is due perhaps to the analogy of roots beginning with a spirant which disappeared. Thus $\sigma\epsilon\text{-}\sigma\tau\eta\kappa\alpha$ becomes $\xi\sigma\text{-}\tau\eta\kappa\alpha$, $\sigma\epsilon\text{-}\sigma\rho\nu\eta\kappa\alpha$ becomes $\xi\rho\rho\acute{\upsilon}\eta\kappa\alpha$, $\text{Fe}\text{F}\rho\omega\gamma\alpha$ becomes $\xi\rho\rho\omega\gamma\alpha$.

(3) Where the root began with a single spirant, we have in Homer ϵ for reduplication, as in $\epsilon\text{-}\epsilon\lambda\acute{\mu}\epsilon\nu\omicron\varsigma$ for $\text{Fe}\text{-}\text{Fe}\lambda\acute{\mu}\epsilon\nu\omicron\varsigma$, and so too in $\xi\omicron\iota\kappa\alpha$ and $\xi\omicron\lambda\pi\alpha$. In Attic we have the ϵ in $\epsilon\acute{\alpha}\lambda\omega\kappa\alpha$, $\xi\omicron\iota\kappa\alpha$, $\acute{\alpha}\nu\acute{\epsilon}\phi\gamma\mu\alpha\iota$.

$\epsilon\acute{\alpha}\delta\acute{\omicron}\tau\alpha$ is from $\sqrt{\sigma\text{F}\alpha\delta\text{-}}$ with two initial spirants, $\epsilon\acute{\iota}\omega\theta\alpha$ and Ionic $\xi\omega\theta\alpha$ from $\sqrt{\sigma\text{F}\epsilon\theta\text{-}}$.

(4) An irregular $\epsilon\iota\text{-}$ appears in $\epsilon\acute{\iota}\lambda\eta\phi\alpha$, $\epsilon\acute{\iota}\lambda\eta\chi\alpha$, which resemble $\epsilon\acute{\iota}\rho\eta\kappa\alpha$ from $\sqrt{\text{F}\epsilon\rho\text{-}}$. The regular forms appear in the Ionic $\lambda\epsilon\lambda\acute{\alpha}\beta\eta\kappa\alpha$, $\lambda\acute{\epsilon}\lambda\omicron\gamma\chi\alpha$.

(5) Where the root began with a vowel we find the reduplication represented either by a long vowel, as in $\eta\sigma\kappa\eta\tau\alpha\iota$, or else by the so-called Attic reduplication. The long vowel arose out of a coalition between the ϵ of the reduplication and the initial vowel of the root, and is therefore similar in form to the augment of the past tenses of roots beginning with a vowel. Thus from $\acute{\alpha}\gamma\omega$ we have $\eta\chi\alpha$, $\eta\gamma\mu\alpha\iota$. Other instances are $\eta\mu\alpha\iota$, $\eta\mu\mu\alpha\iota$ and Epic $\eta\sigma\chi\upsilon\mu\acute{\mu}\epsilon\nu\omicron\varsigma$.

The Attic reduplication is especially common in Homer and consists in taking the initial vowel of the root with the following consonant as a syllable of reduplication, e. g. $\acute{\alpha}\gamma\text{-}\acute{\alpha}\gamma\epsilon\acute{\iota}\nu$. It was originally confined to a few forms and was afterwards extended. Thus in Homer $\epsilon\delta\eta\delta\acute{\omega}\varsigma$ but Sanskrit $\acute{á}\acute{d}a$, Latin $\acute{e}di$. It is regular where the root vowel is short, as in $\acute{\alpha}\rho\alpha\nu\acute{\iota}\alpha$, $\acute{\alpha}\kappa\alpha\chi\acute{\mu}\epsilon\nu\omicron\varsigma$. In Attic we have among others $\acute{\alpha}\kappa\acute{\eta}\kappa\omicron\alpha$, $\epsilon\delta\acute{\eta}\delta\omicron\kappa\alpha$, $\epsilon\lambda\acute{\eta}\lambda\epsilon\gamma\mu\alpha\iota$, $\epsilon\lambda\acute{\eta}\lambda\upsilon\theta\alpha$, $\delta\lambda\omega\lambda\alpha$, and $\epsilon\nu\acute{\eta}\nu\omicron\chi\alpha$.

In some Homeric forms the reduplication has disappeared

(Monro, *H. G.* § 23), viz. δέχεται, ἔρχεται, ἔσσαι, ἐπ-ώχαιο. In οἶδα (= *Foīda*), Sanskrit *véda*, there seems to be found no trace of reduplication.

We now come to another characteristic of the perfect, viz. Stem
variation.
stem variation.

In the indicat. the full form appears in the singular of the active, the weak elsewhere. Thus:—

οἶδα : ἴδμεν. Sanskrit *véda* : *vidmá*. Gothic *vail* : *vitum*.

ἔοικα : ἔίκτην : ἤικτο.

δεῖδω (= δέδφοια) : δεῖδιμεν (= δέδφιμεν).

-εφθορα : ἔφθαρμαι.

τέτροφα : τέθραμμαι.

γέγονα : γέγαμεν.

μέμονα : μέματον.

Compare Epic εἰλήλουθα, but instead of εἰλήλουθμεν for the plural, Homer has εἰλήλουθμεν, and in Attic we have throughout ἐλήλυθα.

Also πέπονθα : πέπασθε 2 plur. (for πεπαθ-τε). πέπασθε is the reading of Aristarchus in Γ. 99, instead of the vulgate πέποσθε.

The regular *o*-degree of the root appears in the Homeric λέλογχα, δέδορκα, ἀν-ήνοθεν, ἔμμορε (O 189), διέφθορα (O. 128).

In Attic we have ἐν-ήνοχα, κέκλοφα, τέτροφα, ἐγρήγορα, etc.

The weak without the corresponding strong degree appears in the Homeric forms πέφαται (cf. φόν-ος), εἴμαρται, πεπαρ-μένος, τέταμαι.

We have given instances of what remains of the old stem variation of the perfect tense. It remains to consider the alterations in this system made by new formations.

Thus the strong stem has taken the place of the weak in New
formations.
the forms *εἰόκαμεν*, poet. *εἰογμεν*, Epic *εἰλήλουθμεν*, *γεγόναμεν* (Aesch. *Sept.* 142). Conversely the weak has taken the place of the strong stem in *δέδια*, Epic. *δεῖδια* (for *δεδοῖα*) and Attic *ἐλήλυθα* (for *εἰλήλουθα*).

The *ε*-degree took the place of the regular *o*-degree, in *πέφευγα*, perhaps instead of *πεφουγα* (cf. *εἰλήλουθα*) with plural *πέφυγμεν*, cf. Epic *πεφυγμένος*. As a matter of fact the perfect

in *ou* appears in Greek only as an antiquity to be found here and there.

Again we have *πέπεισται* (not **πεπισται*, cf. *ἐπέπιθμεν*), *λέλειπται* where the vowel *ε* may be due to the analogy of the present stem.

Sometimes the appearance of *ε* in the root is due to the fact that without it the combination would be unpronounceable. Thus from a perfect *τέτοκα* we could have no plural **τετκμεν*. In such cases pronunciation is rendered possible by the insertion of *ε*. This is the probable explanation of such forms as *συνειλεχώς* (*εἰλοχα*) and *ἀν-ηνεχυῖαν* (*ἐν-ήνοχα*) given by Hesychius (cf. De Sauss. p. 71, n). Such an explanation will perhaps hold in the case of *ἐσ-μέν* as compared with Sanskrit *s-mās*; the prothetic *ε* in Greek may be for the sake of ease of pronunciation.

A high degree of the root appears in the perfects *ἔρρωγα*, *ἀφέωκα* (Herodian), *ἀνέωνται* (Hdt. 2. 165 Bekk., Dind.); *ἀφέωνται* (*N. T.*), *ἀνεωσθαι* (*Tabl. Heracl.*) which belong to the *ē*-series of Ablaut.

The perfects *λέλαθα*: *λέλαῤσται*, *ἔστακα*: *ἔσταῤμεν* belong to the *ā*-series of Ablaut, but there are no traces of the high degree in *ω* which might have been expected, as is found for instance in *φω-νή* beside *φᾶ-μί* (*φημί*).

The perfects *μέμνη-μαι* (*μέμον-α*), *δέδμη-μαι* (*δαμ-*), *κέκλη-μαι* (*καλ-*), *κεκμηώς* (*καμ-*) stand in the same relation to the perfects with weak degree of root, e. g. *τέτα-μαι*, *πεφυγ-μένος*, as presents like *γιννώ-σκω* to the weak *βᾶ-σκω*, *τιτῦ-σκομαι*.

Perf. subj. If we are to judge from the Homeric conjunctive *εἶδομεν* beside the indic. *οἶδα*, the *ε* degree of the root was the proper form in the conjunctive mood of the perfect.

Perf. imperat. In the imperative the weak degree of the root was appropriate, as in *δεῖδιθι* for *δεδφιθι*, *τέτλαθι*, *μεμάτω*, Latin *memento*.

Perf. part. So in the participle, e. g. *δεδι-ώς*, *πεπαθ-ύια*, *πεφυγ-μένος*, *ἔστα-ώς*. Such forms then as *πεπονθώς* and *ἑστηώς*, with the full root are new formations.

The long vowel of the stem in the masc. of the participle seems to be due to the *F* of the ending. Just as in Homer

φθάνω is for φθάνω or ἄδεής for ἄδφείης, so ἐᾶδόντα is for ἐᾶδ-
φότα. In the Feminine there is no such reason for
lengthening :—

Ἰδφώς = Ἰδώς = εἰδώς	Feminine Ἰδνῖα.
ἄραρφώς = ἄρᾶρώς, ἀρηρώς	,, ἄρᾶρνῖα.
τεθαλφώς = τεθελώς	,, τεθαλνῖα.

From μέμονα we have the double μεμᾶώς and μεμᾶώς (Epic).

The forms τετληνῖα, πεπληγνῖα, τετρηχνῖα, show how early
the strong form intruded into the fem. from the masc.

In P. 5 we have οὐ πρὶν εἰδνῖα τόκοιο, with the full root
in the nom. fem.

The person endings in the perfect were originally directly ^{Addition}
added to the stem without the intervention of a vowel. Thus ^{of endings}
we have ἴδ-μεν and in the pluperfect, ἐπέπιθ-μεν and like ^{in the}
these we ought to have *πεφυγ-μεν, *πεπαθ-μεν, *δεδρακ-μεν ^{perfect.}
as the plurals of *πεφουγα, πέπουθα, and δέδορκα.

In the same way with the perfect and pluperfect middle
there was originally no extension of the stem by a vowel α, as
we can see from such instances as πέπυσμαι, τετῶγμένος, πεφῶγ-
μένος, τέθραμμαι, and ἀλληλιμμένος, in all of which we have the
weak form of the root. Where we have a high degree of the
root, as in λελειμμένος, ἐξευγ-μένος, the ending is still added
immediately to the stem.

In post-Homeric Greek the vowel α which appears in the
sing. act. was extended to the plural as well.

In such instances as γέγα-μεν, μέμα-μεν, τέτλα-μεν, the vowel
belongs to the root and represents the nasal and liquid so-
nants. In the later γεγόν-α-μεν, πεποίθ-α-μεν the α is an
extension of the stem, as it is throughout the tense in the
so-called aspirated perfects, such as πέπραχα, which are post-
Homeric, and in the perfects in -κα of which there are few
in Homer.

Answering to this α, there continually shows itself in San-
skrit a connecting i, between the stem and the termination of
the perfect.

In such a case however as ἔσταμεν, Sk. *tasthimá*, it is doubtful

whether we are to divide the elements ξ -στ-αμεν, *ta-sth-imá* or ξ -στα-μεν, *ta-sthi-má*; which, that is, of the two weak degrees of the root, $\sigma\tilde{\alpha}$ or στ, is represented in this word. Such a combination as ξ στ-μεν was inadmissible, and so we may suppose that the vowel of the ending in ξ στηκα, ξ στηκας, was inserted between the weak stem and the ending. The choice of α was aided by the analogy of the weak aorist. In the singular, $\tau\acute{\epsilon}\tau\omicron\kappa\alpha$ was inflected like $\xi\tau\epsilon\zeta\alpha$, and so in the plural we have $\tau\epsilon\tau\acute{\omicron}\kappa\alpha\mu\epsilon\nu$ like $\acute{\epsilon}\tau\acute{\epsilon}\zeta\alpha\mu\epsilon\nu$.

The 2nd sing. act. of the perfect in -ας, as in $\acute{\alpha}\nu\omega\gamma\alpha\varsigma$, $\delta\epsilon\acute{\iota}\delta\iota\alpha\varsigma$, $\xi\omicron\iota\kappa\alpha\varsigma$, etc., is Homeric as well as Attic. We have the ending -θα in $\omicron\iota\sigma$ -θα, $\eta\sigma$ -θα.

Beside the regular $\epsilon\iota\mu\alpha\iota$, $\gamma\epsilon\gamma\upsilon\mu\acute{\epsilon}\nu\omicron\varsigma$, etc., in which $\sigma\mu$ according to rule has been simplified to μ , we have numerous irregularities such as $\eta\mu\phi\acute{\iota}\sigma\mu\alpha\iota$, $\tau\epsilon\tau\epsilon\lambda\epsilon\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$, $\acute{\epsilon}\zeta\acute{\omega}\sigma\mu\epsilon\theta\alpha$, due to the analogy of the 3rd pers. sing. indic. Conversely $\kappa\acute{\alpha}\theta\eta\tau\alpha\iota$ (for $\kappa\alpha\theta\eta\sigma\tau\alpha\iota$) is due to the analogy of the first pers. $\eta\mu\alpha\iota$.

We have already spoken of the apparent assibilation of δ, τ, θ before μ in the perf. midd. (cf. p. 196). The forms $\pi\acute{\epsilon}\nu\upsilon$ - $\sigma\mu\alpha\iota$, $\lambda\epsilon\lambda\acute{\alpha}\sigma\mu\epsilon\theta\alpha$, $\kappa\epsilon\kappa\alpha\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$, etc., are not due to a change of θμ, δμ into σμ but follow the analogy of $\pi\acute{\epsilon}\pi\upsilon\sigma\tau\alpha\iota$, $\lambda\acute{\epsilon}\lambda\alpha\sigma\tau\alpha\iota$, $\kappa\acute{\epsilon}\kappa\alpha\sigma\tau\alpha\iota$. So too $\iota\sigma$ -μεν for $\iota\delta$ -μεν has followed the analogy of $\iota\sigma$ -τε.

Third
Plural.

The ending of the third pl. act. was -αντι (cf. p. 379).

The root of $\tau\epsilon\theta\nu\hat{\alpha}\sigma\iota$ appears in the full form in $\theta\epsilon\acute{\iota}\lambda\nu\omega$ ($\sqrt{\theta\epsilon\nu}$ -), aor. $\xi\theta\alpha\nu\omicron\nu$ (η), fut. $\theta\alpha\nu\omicron\upsilon\mu\alpha\iota$.

The true perfect should have been, not $\tau\acute{\epsilon}\theta\nu\hat{\alpha}\kappa\alpha$ but $*\tau\epsilon\theta\bar{\alpha}\kappa\alpha$, and the plural $*\tau\epsilon\theta\alpha\mu\epsilon\nu$, $*\tau\epsilon\theta\alpha\tau\epsilon$. But the weak stem $\tau\epsilon\theta\alpha$ -before a vowel became $\tau\epsilon\theta\nu$ - as in $\tau\epsilon\theta\nu$ - $\hat{\alpha}\sigma\iota$, and this form has been extended beyond its proper limits. Hence we get $\tau\acute{\epsilon}\theta\nu\hat{\alpha}\kappa\alpha$, and further a pres. $\theta\nu\acute{\alpha}\sigma\kappa\omega$ ($\theta\nu\eta\acute{\iota}\sigma\kappa\omega$) instead of $*\theta\bar{\alpha}\sigma\kappa\omega$.

In $\omicron\iota\delta\alpha$ we should notice the 3rd pl. $\iota\sigma\bar{\alpha}\sigma\iota$, sometimes in Homer $\iota\sigma\alpha\sigma\iota$, where the σ seems due to the analogy of the 3rd pl. pluperf. $\iota\sigma\alpha\nu$, $\iota\sigma\sigma\alpha\nu$, influenced too by the σ of $\iota\sigma\tau\epsilon$, $\iota\sigma\tau\omicron\nu$. In Doric is found $\iota\sigma\alpha\nu\tau\iota$ like $\iota\sigma\tau\alpha\nu\tau\iota$, whence rose the $\iota\sigma\bar{\alpha}\mu\iota$, $\iota\sigma\bar{\alpha}\tau\iota$, $\iota\sigma\bar{\alpha}\mu\epsilon\nu$ of Theocritus.

With σ like $\zeta\sigma\alpha\sigma\iota$ we have also the poet. 3rd pl. $\epsilon\zeta\alpha\sigma\iota$ for $\epsilon\iota\kappa\alpha\sigma\iota$. $\epsilon\iota\kappa\alpha\sigma\iota$ is the Attic form.

Very frequently we have a transference from the perfect to the present tense formation, as in the $\alpha\nu\omega\gamma\epsilon\iota$, $\eta\nu\omega\gamma\omicron\nu$ of Homer beside the perfect $\alpha\nu\omega\gamma\alpha$, $\epsilon\gamma\acute{\epsilon}\gamma\omega\nu\epsilon$ and $\gamma\epsilon\gamma\omega\nu\acute{\epsilon}\mu\epsilon\nu$ beside $\gamma\acute{\epsilon}\gamma\omega\nu\alpha$, $\epsilon\pi\acute{\epsilon}\pi\lambda\eta\gamma\omicron\nu$, $\pi\epsilon\pi\lambda\eta\gamma\acute{\epsilon}\mu\epsilon\nu$ beside $\pi\acute{\epsilon}\pi\lambda\eta\gamma\alpha$, $\epsilon\mu\acute{\epsilon}\mu\eta\kappa\omicron\nu$ beside $\mu\epsilon\mu\eta\kappa\acute{\omega}\varsigma$, as well as such a hybrid form as $\kappa\epsilon\kappa\lambda\acute{\eta}\gamma\omicron\nu\tau\epsilon\varsigma$ (Π. 430).

Other instances are $\mu\acute{\epsilon}\mu\beta\lambda\epsilon\tau\alpha\iota$, $\eta\kappa\omega$ for $\eta\kappa\alpha$, Sanskrit $\acute{a}\varsigma\alpha$, $\kappa\epsilon\kappa\rho\acute{\alpha}\gamma\epsilon\tau\epsilon$ beside the older $\kappa\acute{\epsilon}\kappa\rho\alpha\chi\theta\iota$, and the infin. $\gamma\epsilon\gamma\acute{\alpha}\kappa\epsilon\iota\nu$ in Pindar (O. 6. 83).

The forms $\pi\acute{\epsilon}\pi\lambda\epsilon\chi\alpha$ $\sqrt{\pi\lambda\epsilon\kappa-}$, $\kappa\acute{\epsilon}\kappa\lambda\omicron\phi\alpha$ $\sqrt{\kappa\lambda\epsilon\pi-}$, $\eta\chi\alpha$ $\sqrt{\acute{\alpha}\gamma}$ are Aspirated Perfects. new formations. This characterization of the perfect is almost exclusively Attic. In Homer we find the plurals $\delta\epsilon\iota\delta\acute{\epsilon}\chi\alpha\tau\alpha\iota$, $\acute{\epsilon}\rho\chi\alpha\tau\alpha\iota$, $\delta\rho\omega\rho\acute{\epsilon}\chi\alpha\tau\alpha\iota$, $\tau\epsilon\tau\rho\acute{\alpha}\phi\alpha\tau\omicron$ ($\tau\rho\acute{\epsilon}\pi\omega$), with an aspirate before the ending, but no aspirated active form. In Herodotus we have $\epsilon\iota\lambda\acute{\iota}\chi\alpha\tau\omicron$, $\acute{\epsilon}\sigma\epsilon\sigma\acute{\alpha}\chi\alpha\tau\omicron$, $\acute{\epsilon}\tau\epsilon\tau\acute{\alpha}\chi\alpha\tau\omicron$, etc., (cf. p. 112), but in the active the single instance $\acute{\epsilon}\pi\epsilon\pi\acute{\omicron}\mu\phi\epsilon\epsilon$ (I. 85). One instance only of the aspirated active perfect is to be found in the tragedians, viz. $\alpha\nu\alpha\rho\acute{\epsilon}\tau\rho\omicron\phi\alpha\varsigma$ (Soph. *Trach.* 1009). In Thucydides also $\pi\acute{\epsilon}\pi\omicron\mu\phi\alpha$ is the only instance. In succeeding writers these perfects begin to be numerous.

Now in such forms of the perfect as $\tau\acute{\epsilon}\tau\rho\iota\phi\theta\epsilon$, $\tau\epsilon\tau\rho\acute{\iota}\phi\theta\alpha\iota$, $\tau\acute{\epsilon}\tau\alpha\chi\theta\epsilon$, the aspiration, though only graphic, is according to rule (cf. p. 193). Apart from these forms, roughly speaking, we may say that up till the period of the later Attic writers, aspiration was confined to guttural and labial stems in the 3rd pl. of the perf. midd. No stem ending in a dental was aspirated, e. g. $\acute{\epsilon}\rho\eta\rho\acute{\epsilon}\delta\alpha\tau\alpha\iota$, $\acute{\epsilon}\sigma\kappa\epsilon\nu\acute{\alpha}\delta\alpha\tau\omicron$.

From the 3rd pl. midd. aspiration passed later on to the active voice. Thus:—

$\acute{\epsilon}\tau\epsilon\rho\acute{\alpha}\chi\alpha\tau\omicron$ (Hdt. 8. 85)	Attic $\tau\acute{\epsilon}\tau\alpha\chi\alpha$.
$\acute{\epsilon}\pi\iota$ - $\tau\epsilon\tau\rho\acute{\alpha}\phi\alpha\tau\alpha\iota$, Epic	Attic $\tau\acute{\epsilon}\tau\rho\phi\alpha$.
$\tau\epsilon\tau\rho\acute{\iota}\phi\alpha\tau\alpha\iota$ (Hdt. 2. 93)	Attic $\tau\acute{\epsilon}\tau\rho\iota\phi\alpha$.

From these the aspiration was extended to active forms to which there was no corresponding aspiration of the 3rd pl. middle.

We cannot be certain how the aspiration arose in the 3rd plural of the perf. midd. The termination cannot be the reason, as, if so, there is no reason why the aspiration should be confined to guttural and labial stems. It is true, as J. Schmidt points out (*K. Z.* xxvii. 311), that whereas in the guttural and labial stems aspiration is regular in such forms as *τέταχθε*, *τέτριψε*, and in the infin. midd., there is no such aspiration in the corresponding forms of dental stems. The dental disappears and we have e. g. *πεφράσθαι*. The aspiration of the guttural in *τέταχθε* may have furnished an analogy for the aspiration of *τετάχεται*. The same analogy does not exist in the case of *ἐσκεύασθε* beside *ἐσκενάδατο*.

The Perfect
in -κα.

We now have to consider the perfects in -κα. Whatever the origin of this formation, as an extensive class, it is peculiar to Greek. In a note on p. 18 of the *Homeric Grammar*, Monro says that these perfects may be regarded as having been formed in the ordinary way from stems in which a root has been extended by a suffixed -κ, as for instance in *ὀλέ-κ-ω*, *ἐρύ-κ-ω*, *δειδίσσομαι* for *δεδφικ-ιομαι*. Thus *ὀλώλεκα* would be the regular perfect of *ὀλέκω*, and *δείδοικα* would answer to the short stem *δφικ-*. This is the explanation where we can point out an actually existing stem in κ. The formation was afterwards extended, and appears even where there is no such stem in κ. Thus *βέβηκα* of *βαίνω* answers to a possible present **βήκ-ω* with which we may compare *βάκτρον*, and *ἔστηκα* to *στήκω*.

Without this extended stem the inflexions of these perfects would be unlike other perfects, as for instance if they appeared in the singular as e. g. *βέβω*, *βέβησθα*, *βέβη* (cf. also Curt. *Verb*, 411).

The same account will also apply to the aorists in -κα, such as *ἔθηκα* (cf. *θήκη*) and *ἔδωκα*, Sk. *ádāṣ-am*.

In the perfect κα came to be regarded as a tense-suffix. At first it was added on to the strong stem, as in *δεῖδοι-κα*, formed out of *δε-δφοια* (= *δεῖδω*). Its addition to the weak stem, as in *τέθεε-κα* (Doric Inscription), was later. This perfect in -κα is not common in Homer and we only have it

with vowel stems. We have βέβηκα, ἔστηκα, δέδωκε, μέμυκε, κέκμηκας, μέμβλωκε, and some others from derived stems, ἀδηκότες, βεβίηκε, δεδάηκε, etc. In Ionic and Attic the formation was extended to all derived verbs and to such perfects as ἔφθαρκα, ἔσταλκα, ἤρπακα, τεθαύμακα, κεκόμικα, and many more.

Osthoff (*Z. G. d. P.* p. 324 sqq.) has given an account of the perfect in -κα which does not seem plausible, viz. that it arose out of the addition of enclitic κε to the stem, and he compares the addition of the particle u, as he supposes, in Sanskrit *dadhā-u* (cf. p. 358). The Homeric *κεν* or *κε* appears as *κα* in Doric. Osthoff has to admit that there is no instance of the use of the perfect in Homer with *κεν*, any more than with *άν*. This he attributes to accident. He discerns *κεν* in *ένεκεν*, in *όκα* and *πόκα*, and asserts that in Homer the meaning of *κεν* is expressed by the German 'wol.' 'Tantae molis erat' he says at the end of his lengthy proof, but few in this case will be ready to admit that his arguments are convincing.

In the Sigmatic aorist the endings were directly added to the stem. The tense therefore ranks as a non-thematic formation. Originally the strong stem was employed in the singular of the active, the weak in the plural active and in the middle voice. Thus Sk. *árāutsam*, act., but *árutsi*, midd. In Greek there are few traces of this stem variation.

Sigmatic
Aorist.

From the aor. of δείκνυμι we can see how the endings were added. Thus in *έδεικ-σ-α*, *έδεικ-σ-αν* the endings represent I.-E. -s-η, -s-ήτ.

Curtius gives eighteen formations as strong aorists, but only a few of these, such as *γέντο*, *έκταν*, and perhaps *άλτο* (*άλτο*), and *ώρτο*, need rank as non-sigmatic. The remainder are in reality sigmatic, since from the time of Homer we find parallel sigmatic forms, and in no case are they without sigma before a suffix beginning with a vowel.

Thus beside <i>δέκτο</i>	there are	<i>δέξο</i> and <i>δέξατο</i> .
„ <i>λέκτο</i>	„	<i>λέξο</i> and <i>λέξατο</i> .
„ <i>έλέλικτο</i>	{ (for <i>έφελικτο</i> , ac-	<i>έλελιξάμενος</i> (for
	cording to Cobet) }	<i>έφελιξ-</i>).
„ <i>πήκτο</i>	there is	<i>πήξαι</i> .

From the root *σfād-* we have *άσμενος*, with the weak degree of root. *άσμενος* cannot be explained, as Curtius thinks, by *σfαδ-μενος*, because, as we have seen (p. 196), the notion that

the dentals pass into σ before μ is a mistake. We must refer $\alpha\sigma\text{-}\mu\epsilon\nu\omicron\varsigma$ to $\eta\sigma\text{-}\alpha\tau\omicron$. $\alpha\sigma\mu\epsilon\nu\omicron\varsigma$ therefore is related to $\eta\sigma\alpha\tau\omicron$ and post-Homeric $\eta\sigma\alpha$ (?), as $\pi\acute{\alpha}\lambda\tau\omicron$ is to $\pi\eta\lambda\epsilon$ (with strong degree of root). Those aorists which have lost their σ according to regular phonetic laws appear to employ only the bare root as their tense stem, and so resemble non-thematic strong aorists rather than the weak sigmatic tense.

The next question concerns the α of the sigmatic aorist. In the 1st singular it represents an original $-\eta$, Sk. $-am$. Monro (*H. G. App. A.* 310) holds that the vowel was extended to the other persons by analogy. Thus the original inflexion ran

$\epsilon\delta\epsilon\iota\kappa\text{-}\sigma\text{-}\tilde{\alpha}$, $\epsilon\delta\epsilon\iota\kappa\text{-}\varsigma$, $\epsilon\delta\epsilon\iota\kappa\text{-}\sigma\text{-}(\tau)$, $\epsilon\delta\iota\kappa\text{-}\sigma\text{-}\mu\epsilon\nu$.

To get rid of these blocks of consonants the α of the 1st sing. was extended by analogy, and so we get $\epsilon\delta\epsilon\iota\varsigma\alpha\varsigma$, $\epsilon\delta\epsilon\iota\varsigma\alpha\mu\epsilon\nu$, $\epsilon\delta\epsilon\iota\varsigma\alpha\tau\omicron$, $\epsilon\delta\epsilon\iota\varsigma\acute{\alpha}\mu\eta\nu$. The stem was regarded no longer as $\delta\epsilon\iota\kappa\text{-}\sigma\text{-}$, but as $\delta\epsilon\iota\varsigma\alpha\text{-}$, and as such was extended to the opt. $\delta\epsilon\iota\varsigma\alpha\text{-}\iota\mu\iota$, the partic. $\delta\epsilon\iota\varsigma\alpha\text{-}\varsigma$, and the imperative. For this extension we may compare what has been already said about the perfect (p. 421).

This explanation of Monro's is simpler than that of Brugmann, who regards the α of the aorist stem as a development from the nasal of the ending in $\epsilon\delta\epsilon\iota\kappa\text{-}\sigma\text{-}\mu\epsilon\nu = \epsilon\delta\epsilon\iota\kappa\sigma\text{-}\alpha\mu\epsilon\nu$, and from this extended to $\epsilon\delta\epsilon\iota\varsigma\alpha\varsigma$, $\epsilon\delta\epsilon\iota\varsigma\alpha\tau\epsilon$, $\epsilon\delta\epsilon\iota\varsigma\omega$, etc. Both explanations agree, however, in the important point that the α of the stem is a development to lighten a block of consonants, and that it was extended by analogy over the whole of the sigmatic aorist paradigm.

The 3rd sing. $\epsilon\delta\epsilon\iota\varsigma\epsilon$ is for an older $\epsilon\delta\epsilon\iota\kappa\text{-}\sigma\text{-}\tau$. The ϵ of the Greek ending is not original. It may be due to that assimilation between the aorist and the perfect tense system, which we have noticed in other inflexions. In the 2nd sing., for instance, $\omicron\iota\sigma\theta\alpha$, $\eta\sigma\theta\alpha$ give the true perfect ending, but from $\lambda\acute{\epsilon}\lambda\omicron\iota\pi\alpha$ we have $\lambda\acute{\epsilon}\lambda\omicron\iota\pi\alpha\varsigma$ like $\epsilon\delta\epsilon\iota\varsigma\alpha\varsigma$. So perhaps like $\omicron\iota\delta\epsilon$ we have $\epsilon\delta\epsilon\iota\varsigma\epsilon$. On the other hand we can explain $\epsilon\delta\epsilon\iota\varsigma\epsilon$ by comparison with the Homeric thematic formations with σ , such as $\delta\acute{\upsilon}\sigma\epsilon\tau\omicron$, $\beta\acute{\eta}\sigma\epsilon\tau\omicron$, $\iota\acute{\xi}\omicron\nu$.

In a comparison of the sigmatic aorist in Sanskrit and in Greek, it should be noted that Sanskrit has more variety in this formation. Thus *s*, *iṣ*, *siṣ* and *sa* are all employed as tense-signs of the sigmatic aorist (Whitney, *Sk. Gr.* § 877).

From √ *rudh* we have the aorist *ārāut-sam*, *ārāut-sis*, *ārāut-sit*, where *s* is the tense-sign.

From √ *budh* we have the aorist *ābodh-iṣam*, *ābodh-is*, *ābodh-it*, where *iṣ* is the tense-sign. We may compare Gk. ἦδη (for ἦδεσα = ἦφειδεσα) with Sk. *ā-vediṣ-am* (cf. p. 428).

From √ *yā* we have the aorist *ayā-siṣam* where *siṣ* is the tense-sign and from √ *diṣ* the aorist *ādik-ṛam*, *ādik-ṛas*, *ādik-ṛat*, where *sa* is the tense-sign. This last does not correspond to *ἔδειξα*, because it is thematic and because in Sanskrit we have the reduced, in Greek the full form of the root.

σ is added on directly in *ἐμνη-σα*, *ἔστη-σα*, *ἔδεικ-σα*, *ἔξεσ-σα* Addition of *σ*. (*ἔξεσα*).

In Homer we find the aorists *ἔλσαι*, *κέρσαι*, *κέλσαι*, *κύρσαι*, etc.; but in Attic the new formations *ἔκειρα*, *ᾠκειλα*, modelled upon *ἔκτεινα*, *ἐνειμα*, where *σ* has disappeared, and the preceding short vowel is lengthened in compensation.

While the aorists from such stems as *μνᾶ* (*μνη*) and *χρη* Stem show no stem variation, any more than the present stems of variation. this character (cf. p. 396), yet in stems capable of variation we do find traces, though scanty, of a distinction between strong and weak forms.

Thus	ἄσμενος	√ <i>sfād</i>	beside	ἦσατο.
	πάλτο		„	πῆλε.

In both *πῆλε* and *ἔφηνε* the long vowel is original, and not the result of lengthening in compensation for loss of *σ*, for in that case it would be *ā*, as in *ιστάς* for *ισταντς*, or *ἐκέρδᾱνα* for *ἐκερδανσα*.

We might exemplify stem variation by comparing *ἔστησα* (*ἔστᾱσα*) with the weak *ἔστᾱσαν* (M. 56) which is transitive in meaning. But the form is uncertain. La Roche reads *ἵστασαν*, which is probably right.

On the whole question of stem variation in the sigmatic aorist we may say that, though there is sufficient reason for assuming an original alternation of the strong and weak stem, yet in Greek, as in Sanskrit, the strong form has prevailed and been extended from the singular of the indicative active into the plural and dual of that tense as well as into the middle voice.

A sigmatic aorist form is perhaps to be traced in Epic ἴσαν, beside ἦσαν, the 3rd pl. of ἦδη. The σ is also shown in ἦστην, ἦσμεν, etc., which can stand for ἦφιδ-σ-την, ἦφιδ-σ-μεν. ἦδη for ἦδεα will then stand for ἦδεσα (= ἦφειδεσα), Sk. *á-vedis-am*, with the strong stem, while ἦφιδ-σ-μεν, etc., show the weak stem.

After the type of ἔμνη-σα, ἔχρη-σα, we have the aorists of the denominative verbs, ἐτίμη-σα, ᾤκη-σα, ἐμίσθω-σα. Verbs in -εω often have the short vowel in the sigmatic aorist, e. g. ἐτέλε-σα, Ep. ἐτέλεσσα, but in this instance the stem is τελεσ-.

In the Homeric καλέσσαι, ὀλέσσαι, ἐλάσσαι the double σσ is due to the analogy of the aorists of stems ending in σ or a dental mute, as for instance ζέσ-σαι, τελέσ-σαι, ἐρέσ-σαι (ἐρετ-), χάσ-σατο (χαδ-). Upon the same analogy we have such aorists as ἐκόρεσσα, ἐδάμασσα from κορέννυμι, δάμνημι.

Sigmatic formations with the thematic inflexions are to be found in the Homeric ἴξον, ἐβήσετο, ἐδύσετο, λέξο, ὄρσο, οἴσετε, etc.

The aorist optative in -σαιμι must be regarded as modelled upon the thematic -οιμι, in place of the regular -σιην as in εἰδείην (= εἰδεσιην).

Pluperfect. The Pluperfect serves as an augmented preterite to the perfect stem.

In form it sometimes approaches closely to the aorist system, as we have already seen in the case of ἦδεα, ἦδη.

We can distinguish the formations into two main divisions:—

1. Where the pluperfect is distinguished from the perfect by the augment, which is often omitted, and the secondary endings.

Thus answering to	γέγατον	plupf.	γεγάτην.
	μεμά-ασι	„	μέμασαν.
	ἐστήκασι	„	ἔστασαν.

We have also the Homeric ἐπέπιθμεν, ἐδείδιμεν, ἐίκτην, and in the middle ἐτέτυκτο, ἠλήλατο.

Along with these forms we may rank the thematic ἐγέγωνε,

ἀνωγον, ἐμέμηκον (Monro, *H. G.* § 68), of which we have already spoken under the perfect.

2. We have the pluperfect compounded of the perfect stem, the augment, and the suffix -εα (for -εσα), Attic -η, as in ᾗδη for ᾗδεα (= ᾗφείδεσα), and in the plural ᾗσμεν for ᾗφιδόμεν.

The same termination -εα is added on to the long stem in ἐτεθήπεα. The original inflexion should run—

εἰσθήκεα εἰσθήκεας εἰσθήκεε (= εἰσθήκει).

From ᾗδη we have 2nd sing. ᾗδησθα as the regular Attic form answering to οἶσθα.

In the plural we have ἴσαν, unaugmented in Homer, and εοίκεσαν (N. 1C2).

The proper form of the pluperfect endings in Attic Greek is discussed by Rutherford (*N. P.* 229, sqq.), who pronounces the singular endings to have been -η (for εα), -ης (for -εας), and -ει or -ειν (for -εε); and the 3rd plural ending -εσαν, as in ἐγρηγόρεσαν (Ar. *Plut.* 743). In Hellenistic Greek the -ει of the 3rd person has been extended to the other persons, and we have εἰσθήκειν, -κεις, -κει.

There are three types in the formation of the sigmatic future. Sigmatic future.

1. The verb stem with the suffixes -σο, -σε, as in πεύσομαι, δείξω, στήσω, δώσω, Sk. *dā-syá-mi*, cf. τελέσ-σω Epic, κηρυκ-σω (ξ), τιμή-σω, of derivative stems. μιγή-σομαι, λυθή-σομαι, come from the aorist stems of ἐμίγη-ν, ἐλύθη-ν, just as γνώ-σομαι, σβή-σομαι from the aorist stems of ἔγνω-ν, ἔσβην-ν.

The intervocalic σ remains, contrary to phonetic rule, in δώσω, μνήσω, etc., as it does in ἔστησα and other formations (cf. p. 329).

2. The verb stem with ε, α, or ο, representing the *svara-* bhākti ε and the suffixes -σο, -σε.

τενέω from τεν-ε-σω, Dor. τενώ, Att. τενώ.

φθερέω from φθερ-ε-σω, Dor. φθερίω, Att. φθερώ.

Cf. Sk. *tan-i-syá-mi*, with an auxiliary *i* before the sibilant.

In the same way we must explain the future of derivative verbs such as καθαρώ, ἀγγελάω.

In many cases the ϵ , α , o ($= \vartheta$) is not a suffix, but a substantive part of the verbal root, e. g. $\acute{\alpha}\lambda\acute{\epsilon}\omega = \acute{\alpha}\lambda\acute{\omega}$ for $\acute{\alpha}\lambda\epsilon\text{-}\sigma\omega$, with which we may compare $\acute{\alpha}\lambda\acute{\epsilon}\text{-}\sigma\sigma\alpha\iota$, $\acute{\alpha}\lambda\epsilon\text{-}\tau\eta\rho$.

$\kappa\rho\acute{\epsilon}\mu\alpha\text{-}\mu\alpha\iota$ fut. $\kappa\rho\epsilon\acute{\mu}\alpha\text{-}\sigma\omega$, $\kappa\rho\epsilon\mu\acute{\omega}$.

$\delta\mu\nu\text{-}\mu\iota$ „ $\delta\mu\omicron\text{-}\omicron\mu\alpha\iota$, $\delta\mu\omicron\upsilon\mu\alpha\iota$.

In I. 274 we find $\delta\mu\acute{\epsilon}\iota\tau\alpha\iota$, which points to a 1st pers. $\delta\mu\epsilon\text{-}\omicron\mu\alpha\iota$ like $\acute{\alpha}\lambda\acute{\epsilon}\text{-}\omega$, but $\epsilon\omicron$ in Homer would contract to $\epsilon\upsilon$ and so give $\delta\mu\epsilon\upsilon\mu\alpha\iota$. We must assume a stem $\delta\mu\omicron\text{-}$, as in $\acute{\omega}\mu\omicron\text{-}\sigma\alpha$, $\delta\mu\omicron\text{-}\tau\acute{\omicron}\varsigma$, and suppose that $\delta\mu\acute{\epsilon}\iota\tau\alpha\iota$ is an imitative form upon the analogy of $\kappa\alpha\mu\acute{\epsilon}\iota\tau\alpha\iota$.

The so-called Attic futures like the Epic $\kappa\alpha\lambda\acute{\epsilon}\omega$, $\tau\epsilon\lambda\acute{\epsilon}\omega$, $\acute{\alpha}\lambda\epsilon\iota\tau\alpha\iota$, $\kappa\omicron\rho\acute{\epsilon}\epsilon\iota\varsigma$, $\tau\alpha\nu\acute{\upsilon}\omega$, have lost the intervocalic σ , but in the aorist we find $\acute{\epsilon}\kappa\acute{\alpha}\lambda\epsilon(\sigma)\sigma\alpha$, $\acute{\epsilon}\tau\acute{\epsilon}\lambda\epsilon(\sigma)\sigma\alpha$, $\acute{\epsilon}\kappa\acute{\omicron}\rho\epsilon\sigma\alpha$, etc., in which the σ did not drop out. In the only case in which σ has disappeared, e. g. $\eta\delta\epsilon\sigma\alpha$, $\eta\delta\epsilon\alpha$ ($\eta\delta\eta$), contraction has ensued, and the form has lost the trace of its aorist origin.

$\acute{\epsilon}\gamma\eta\rho\acute{\alpha}\nu$.—From the stem $\gamma\eta\rho\acute{\alpha}$ we should have expected aorist $\acute{\epsilon}\gamma\eta\rho\acute{\alpha}\sigma\alpha$, answering to Sk. *ájariṣam*. But instead of this we have $\acute{\epsilon}\gamma\eta\rho\acute{\alpha}\nu$, after the type of $\acute{\epsilon}\delta\rho\acute{\alpha}\nu$. The long $\gamma\eta\rho\acute{\alpha}$ of $\acute{\epsilon}\gamma\eta\rho\acute{\alpha}\sigma\alpha$ has followed the analogy of the $\bar{a}$ -stems. Similarly beside $\eta\delta\epsilon\alpha$ we have $\epsilon\iota\delta\acute{\eta}\sigma\omega$ in Homer.

„ $\kappa\omicron\rho\acute{\epsilon}\omega$ „ $\kappa\epsilon\kappa\omicron\rho\eta\mu\acute{\epsilon}\nu\omicron\varsigma$.

„ $\mu\alpha\chi\acute{\epsilon}\sigma\alpha\sigma\theta\alpha\iota$ „ $\mu\alpha\chi\eta\tau\acute{\eta}\varsigma$, $\mu\alpha\chi\acute{\eta}\sigma\omicron\mu\alpha\iota$.

Doric
future.

3. The verb stem with suffixes $\text{-}\sigma\epsilon\omicron$, $\text{-}\sigma\epsilon\epsilon$, the so-called Doric future, e. g. $\pi\rho\alpha\zeta\acute{\epsilon}\omega$ (Delph.), or with the ι of other Doric dialects, $\beta\omicron\alpha\theta\eta\sigma\acute{\iota}\omega$ (Cret.).

The Doric future in $\text{-}\omicron\mu\alpha\iota$ was practically not used by Attic writers (cf. Rutherford, *N. P.* 92). In the MSS. we find forms such as $\phi\epsilon\nu\zeta\omicron\upsilon\mu\alpha\iota$, $\pi\nu\epsilon\nu\sigma\omicron\upsilon\mu\alpha\iota$, $\pi\lambda\epsilon\nu\sigma\omicron\upsilon\mu\alpha\iota$, and when the metre requires, Euripides and Aristophanes employ the Doric form $\phi\epsilon\nu\zeta\omicron\upsilon\mu\alpha\iota$ (Ar. *Ach.* 1129; *Plut.* 447; *Av.* 932). But in the prose writers $\phi\epsilon\upsilon\zeta\omicron\mu\alpha\iota$, $\pi\lambda\epsilon\upsilon\sigma\omicron\mu\alpha\iota$, $\pi\nu\epsilon\upsilon\sigma\omicron\mu\alpha\iota$ alone are correct.

This Doric future is the result of ‘contamination’ between the future in $\text{-}\sigma\omega$ and the future in $\text{-}\epsilon\omega$ (for $\text{-}\epsilon\sigma\omega$). The ι in Doric appears only before the vowels o and ω , just as in the

same dialect we have *θιός* for *θεός*, *κοσμίοντες* and *ὀρμιόμενοι*. The Doric *-ιο-* then of *πραξίμεν* is purely dialectic for *-εο-*. In Homer we find *ἔσ-σεῖται* and *πείσονται*.

We have seen that in many futures from stems ending in vowels the *σ* has disappeared, e. g. *καλῶ*, *ἐρύουσι*, etc., and from stems ending in *σ*, e. g. *τελῶ* (*τελεσ-*) and Epic *κορέει*, *μαχέονται*. From verbs in *-αω* we have the Homeric futures *δαμά*, *κρεμόω*, *ἐλόωσι*, etc., and this type has extended to the parallel verbs in *-αζω*, e. g. Attic fut. *βιβῶ*, *πελῶ*. From verbs in *-ιζω* we more often have futures like *βαδιεῖ*, *κουφιεῖς*, etc., than the forms in *-ισω*.

From verbs whose stems end in a liquid we have the Homeric *ἀγγελέω*, *κερέω*, but also *διαφθέρσει*, *θερσόμενος*.

In dealing with Homeric futures we have to remember that as the pure conjunctive in independent sentences expresses *will*, it is often possible for a future to be an aorist conjunctive, especially in the first Person.

From the perfect stem we have futures like the Homeric *κεχαρησέμεν*, Att. *ἐστήξω* (*κσ*), *τεθνήξω* (*κσ*), and the middle forms *εἰρήσεται*, *γεγράψεται*, *ἐσκέψομαι*, etc.

Where the indicative is without a thematic vowel, then the suffix of the conjunctive is *ο*, *ε*, as in

Homeric <i>ἄλτο</i>	conj. <i>ἄλεται</i> .
<i>ἐρύσσαμεν</i>	„ <i>ἐρύσσομεν</i> .
<i>ἐπέπιθμεν</i>	„ <i>πεποίθομεν</i> .

The conjunctive mood.

So in Sanskrit we have the indicative *hán-ti*, conj. *hán-a-ti*. Where the stem ended in a vowel there ensued contraction, which dates back probably to the original language. In Attic we have *πρόσθη-ται*, *πρόθηθε*. In Homer we find formations which must be regarded as new, e. g. *στή-ο-μεν*, *θή-ο-μεν*, *βλή-ε-ται*, etc., where the thematic vowel has been added on without contraction to the full form of the stem. The hiatus shows that the forms do not date back to the original language. We find a variation in writing the long stem before the endings in Homer, as e. g. *θείω*, but *θή-ης*, *βείω*, but *βή-ης*. For a discussion upon this point cf. Monro (*H. G. Appendix C*). As we have had occasion to remark

before, ϵ of the old alphabet had to do duty for ϵ , η , and sometimes $\epsilon\iota$, and this has led to orthographical confusion.

The presents which have a stem capable of variation show the full form in the conjunctive—

$\sqrt{\epsilon}\sigma$ - conj. $\xi\omega$ (Att. ω) Sk. *ásāni* Lat. *ero*.

If we are to judge from the Homeric $\epsilon\dot{\iota}\delta\omicron\mu\epsilon\nu$ beside the indicative $\omicron\dot{\iota}\delta\alpha$, the middle degree of the root was appropriate to the conjunctive. The proper form then of the conjunctive of $\epsilon\pi\acute{\epsilon}\theta\iota\mu\epsilon\nu$ should once have been $\pi\epsilon\pi\acute{\epsilon}\theta\omicron\mu\epsilon\nu$.

Even in Homer some conjunctives of non-thematic stems pass over into the thematic conjugation, e. g. $\delta\lambda\eta\tau\alpha\iota$, $\pi\acute{\epsilon}\mu\psi\omega\mu\epsilon\nu$. In later Greek the long vowel became the rule in the conjunctive; but the old formation with the short thematic vowel remains in the Attic futures $\xi\delta\omicron\mu\alpha\iota$, $\chi\acute{\epsilon}\omega$ (for $\chi\epsilon\acute{\epsilon}\omega$, conj. of $\xi\chi\epsilon\alpha$), and $\pi\acute{\iota}\omicron\mu\alpha\iota$, which are really conjunctives. Besides these in Homer we have $\beta\acute{\epsilon}\omicron\mu\alpha\iota$ (cf. $\beta\acute{\iota}\omicron\varsigma$) and $\delta\acute{\eta}\epsilon\iota\varsigma$.

The strong stem of the conjunctive has sometimes been reduced, as in $\dot{\iota}\omega$ for $\epsilon\dot{\iota}\omega$. In Homer we find $\dot{\iota}\omicron\mu\epsilon\nu$, where $\dot{\iota}$ may represent $\epsilon\iota$.

In
thematic
verbs.

In the thematic conjugation, where the indicative has the thematic vowel, we find long ω , η as the suffixes of the conjunctive:—

$\phi\acute{\epsilon}\rho\omega\mu\epsilon\nu$

$\phi\acute{\epsilon}\rho\eta\tau\epsilon$, cf. Sk. *bhárātha*.

$\dot{\iota}\delta\omega\mu\epsilon\nu$

$\dot{\iota}\delta\eta\tau\epsilon$.

In $\phi\acute{\epsilon}\rho\omega\sigma\iota$, $\phi\acute{\epsilon}\rho\omega\upsilon\tau\alpha\iota$ the lengthening is not regular, for, as we have already seen (p. 183), the vowel should be shortened before $\upsilon\tau$.

The Latin *ferā-* in the conj. seems to point to original Indo-European stem *bherā-*, in which case we must assume that Greek has taken ω , η , after the analogy of $\omicron$, ϵ of the indicative and of the conjunctive of non-thematic verbs, and that $\phi\epsilon\rho\acute{\alpha}\mu\epsilon\nu$, $\phi\epsilon\rho\acute{\alpha}\tau\epsilon$ have passed to $\phi\acute{\epsilon}\rho\omega\mu\epsilon\nu$, $\phi\acute{\epsilon}\rho\eta\tau\epsilon$, following $\phi\acute{\epsilon}\rho\omicron\mu\epsilon\nu$, $\phi\acute{\epsilon}\rho\epsilon\tau\epsilon$ of the indic. in the quality of the vowel.

Imperative
mood.

The Imperative has no special mood sign as distinct from its person endings. It is formed in Greek by adding its person endings to the stems of the present, aorist, and perfect,

active, middle and passive. In Latin all imperatives, with the single exception of *memento* (*me-mn-tōl*) are formed from the present stem.

In Sanskrit only three persons, the 2nd and 3rd sing. and the 3rd plur., have special forms. In the 2nd sing. Sanskrit has *bhāra* (Greek *φέρε*, cf. Latin *rege*), and a parallel form, also used for other persons, in *-tāt*, *bhāratāt* (cf. Greek *φερέτω*, Latin *regito*). The 3rd sing. in Sanskrit ends in *-tu* (*bhāratu*) and the 3rd plur. in *-ntu* (*bhārantu*). In Greek we have 3rd plur. *φερέωσαν*, *φερόντων*, in Latin *regunto*. On the ground of the paucity of the forms and the want of distinction between the persons, it has been supposed that the imperative had not originally distinct forms for the separate persons, but resembled the Infinitive in having but one formation for different persons and numbers. (See Delbrück, *S. F.* iv. 118; Brugmann, *M. U.* iii. 2.) The arguments for this view may be briefly stated as follows.

Certain indicative forms with the secondary endings have in the Arian languages a double form, one with the augment, the other without it. This latter type has two distinct functions. On the one hand it is a preterite indicative and indistinguishable in meaning from the augmented form; on the other hand it has a conjunctive or imperative meaning. In the latter case it has been called the pseudo-conjunctive or injunctive mood. In the 2nd plur. this latter form is common to all Indo-European languages, and not uncommon in the 2nd and 3rd dual.

In Greek we have in Homer unaugmented preterites, e. g. *φέρετε*, and also corresponding imperative forms, e. g. *φέρετε*, *φέρετον*, *ἔσ-τε*, *ἔ-τε*, *δό-τε*, *δείξα-τε*, *κεκράγε-τε*, Latin *vehite*, *mone-te*, *es-te*, *dā-te*, *fer-te*, etc., where the endings *-τε*, *-te*, correspond to the secondary Sanskrit ending *-ta*. In the singular we have *δό-s*, *ἔ-s*, *θέ-s* (apparently for **δως*, **ῆs*, **θης* answering to assumed indic. forms **ἐδως*, **ἐθης*), *σχέ-s*, *ἐνίσπε-s*, and similarly the middle imperatives like *ἴτασο*, *τίθεσο*, *θοῦ* (beside the augmented forms *ἐτίθεσο*, *ἐθου*, etc.); in Latin *ēs*, *ēste* (for **ed-s*, **ed-te*), *ēs*, *ēste* (for **es-s*), *fer*, *vel*

(for *fer-s, *vel-s). We may perhaps also put here the forms given by Festus (p. 205), *prospices* (*prospice*), *perfines* (*perfringe*), cf. *sins* (*sine*) in *Carm. Arr.*

We may further note that in the oldest Sanskrit prohibition was expressed by the particle *mā́*, Greek *μή*, with this pseudo-conjunctive which corresponds in form to the augmentless form of a past tense (Whitney, *Sk. Gr.* § 579), and which corresponds to the Imperative forms in question.

The only forms that we can be sure were exclusively imperative are :—

(1) The form consisting of the pure verb theme without personal suffix, Indo-European *bhère*, *φέρει*, *rege*, Sanskrit *ihi*.

(2) The form with the suffix *-dhi*, *ῖσ-θι*.

(3) The form with the suffix *-tōl*, Indo-European *bhere-tōl*.

Of the suffix *-dhi*, which does not appear in Latin, no explanation can be given. The suffix *-tōl* is probably of substantival rather than verbal origin. In Sanskrit the corresponding suffix *-tṃl* appears as the termination of the 2nd pers. of all numbers and of the 3rd sing. In Greek the form in *-τω* is ordinarily 3rd sing., but the Hesychian glosses (as emended) *ἐλθετωσ̄ ἐλθέ, φαρῶσ̄ ἀνάγνωθι* make it probable that it was also used for the 2nd sing. In Latin *esto(d)* is 2nd and 3rd sing.; the corresponding form in Umbrian is 2nd plur. If therefore the termination *-tōl* was used in all persons and numbers, it cannot clearly be of a verbal character, nor can it be of pronominal origin and to be compared, as some have thought, with the termination of *is-tud*. In form it is the abl. sing. of a verbal adj. in *-tós*, and if this is really its origin, it will explain the accent on *ἐλθετωσ̄*, *φαρῶσ̄*. It may be noticed that in inscriptions *nitilo*, *utilo*, *consento* appear as passive forms, which is a further indication that the termination is not verbal.

It would therefore seem that the imperative has been made up out of certain old forms, conjunctive or imperative in meaning, in which the distinctions of person were not clearly marked. But beyond this it is not possible to go. We can say that phonetically the 'injunctive' is identical with

the unaugmented past tense of the indicative. That historically there is any real connexion between the two it is hard to believe. We may however be sure that the parent speech did not possess a fully developed imperative with special forms for each number and person. It was easy to supply the forms wanting from the conjunctive mood, whose meaning is almost indistinguishable from that of the imperative.

Thus far we have been speaking of the imperative as a whole. As to tenses, in the Arian languages there is hardly any tense existing except the present, which is used in positive commands. In prohibitions the aorist of the pseudo-conjunctive, rarely the present, is used.

In Greek we may notice that the 2nd sing. of the sigmatic aor. imper. act. and mid. (e.g. κλέψου, κλέψαι) are strange forms which apparently originated within the limits of the Greek language. In prohibitions the rule is to say μὴ κλέπτε but μὴ κλέψῃς. In the oldest Sanskrit, as we have seen, *má* was used in prohibitions with the pseudo-conjunctive and not with the Imperative; in Greek the Imperative had been already formed into a distinct mood out of the old isolated imperative forms and the spurious conjunctive, and it was therefore possible to say μὴ κλέπτε. But as the aor. imper. was a later formation, μὴ was used only with the aor. conj., and this use remained a fixed idiom of the language even after the creation of an aorist imperative. If this account is correct, it is vain to look for any psychological explanation of the difference between μὴ κλέπτε and μὴ κλέψῃς (Monro, *H. G.* § 328).

In thematic verbs the 2nd sing. act. of the imperative appears in φέρε, Sanskrit *bhára*. In the aor. ἰδέ, λαβέ. Endings of
the Im-
perative.

In non-thematic verbs the ending is -θι, Sanskrit -*dhi*, -*hi* e.g. ὄμνυ-θι, ἵ-θι, Sanskrit *ihi* with weak stem. But ὄμνυε, καθίστα, τίθει, δίδου have been assimilated to the thematic system.

On the forms in -ς (δός, θές, σχές, ἐκφρές, etc.) and in -τω (φέρétω) see above.

Answering to the active φέρετε, φερέτω the middle has

φέρεσθε, φερέσθω. The forms φέρετω, φερέσθω were pluralised in the different dialects in different ways, e.g. φερέτωσαν, φερόντων, φερέσθωσαν, φερέσθων, which however we need not discuss here, as no certain explanation can be given of them.

Optative
mood in
non-thematic
stems.

The form of the Optative mood depends upon whether the tense-stem is thematic or non-thematic in the Indicative. In non-thematic tense-stems the suffix is -ιη- for the sing. of the active and -ι- for the dual and plural active and all numbers in the middle:—

ε-ιη-ν for ἐσ-ιη-ν in the singular.

εἶμεν for ἐσ-ι-μεν in the plural.

Cf. Latin *siem* (= *s-iō-m*) and *s-i-mus*. Sanskrit *syām*, pl. *syāma*, with the weak $\sqrt{s}$ both in singular and plural, while Greek has $\sqrt{\epsilon\varsigma}$.

The original form of the 3rd pl. appears in Elean *συν-έαν*, for -εξαν (= -εσ-ι-αν(τ)), Indo-European *s-i-ǵlt*. The Attic εἶεν is a new formation (cf. p. 380).

Instances of the optative of non-thematic tenses with weak stem and suffix -ιη- are to be found in the Homeric βα-ιη-ν, θε-ιη, ἀλο-ιη-ν, φα-ιη, κιχε-ιη, ἀνα-δέ-ιη (for -δουιη).

Of the plural with weak stem and suffix -ι- we have the following: φα-ι-μεν, θε-ι-μεν, δο-ι-μεν and in the middle δο-ι-μην, θε-ι-το.

τιθε-ιη-ν and διδο-ιη-ν are variations for the original τιθ-ιη-ν, διδ-ιη-ν, Sanskrit *dadh-ǵām* and *dad-ǵām*, just as in the indicative, τίθε-μεν, and δίδο-μεν take the place of τίθ-μεν δίδ-μεν (cf. p. 237).

The accentuation of τιθείμεν, διδοῖμεν (from τιθε-ι-μεν, διδο-ι-μεν) shows that these optatives have followed the analogy of παρέιμεν, εἰδείμεν, which arose out of παρ-εσ-ι-μεν, εἶδεσ-ι-μεν. εἰδείην is an old optat. of the sigmatic aor. (cf. on ἦδη, p. 428).

Perhaps λείην (T. 209) stands for λε-σ-ιην and points to ἦια being an aorist (= ἦε-εσα), but more probably it is a new formation after the pattern of εἰδείην, just as on the similarity

of *δεδιέναι* and *ειδέναι* was modelled the *δεδειείην* of Plato after the pattern of *ειδείην*.

The aor. optatives like *δείξαιμι*, *δείξαις*, etc., are new formations upon the analogy of the thematic *-οιμι*, *-οις*. They are not the regular Attic forms (cf. Rutherford, *N. P.* 429). Even in tragedy the forms *-ειας*, *-ειε(ν)* are more frequent than *-αις*, *-αι* : much more so then in Attic prose.

The sigmatic optat. in *-σεια* has the name of the Aeolic ^{Aeolic} optative. It was probably extended from the 3rd plural, *δείξειαν*, which may be for *δεικ-σεσ-ι-αν* (cf. p. 427).

The contracted verbs in Attic have in the singular of the optative the forms *φιλοίην*, *τιμῶην* and in the plural the short *φιλοῖμεν*, *τιμῶμεν*. The Attic *φιλοίην* does not agree with the Aeolic *φιλείην*, but is due to the analogy of the optative of *δίδοιμι*. Thus in the dual and plural optative of *δίδοιμι* we have *διδόιμεν*, and the aorist *δοῖμεν*. These forms agreed with the dual and plural optat. of the contracted verb, viz. *φιλέοιμεν*, *φιλοῖμεν*. The analogy was extended to the singular, and so we have *φιλοίην*, like *δοίην*, *διδόιην*.

The Aeolic *φιλείην* on the other hand may be compared with *τιθείην*, *θείην* from *τίθημι* (cf. p. 410).

Another illustration of the working of analogy in the optative may be found in the following : *σχοῖμεν* resembles *δοῖμεν* and hence in the singular we have *σχοίην* beside *δοίην* : *παράσχοιμεν* resembles *λύοιμεν* and hence *παράσχοιμι* like *λύοιμι*.

If the Indicative has the Thematic vowel the suffix is *-ι- :-* In thematic stems.
φέροις Sanskrit *bhárēs*. *ἴδοις* Sanskrit *vúlēs*.

In the first sing. we have the primary ending *-μι*, *φέροιμι*, but answering to the Sanskrit ending in *-am* (= *ṃ*), we should expect in Greek *φεροια*. *-οιμι*, however, has taken the place of *-οια*. There is no good ground for assuming such an ending as *-οιω* in the optative of thematic verbs. The form *τρέφωιω* rests only on the authority of the grammarian George Choeroboscus (cf. *New Phryn.* p. 450).

In the rest of the persons there is nothing further to notice, except the third plural *φέροιεν*, where we should rather expect *φέροιαν* for original *-ητ* (cf. p. 380).

The Infinitive.

We have already spoken of the distinction between the Verb Finite and Infinitive. The Infinitive is Verbal in so far as it implies predication, and as the words dependent on it are constructed as with the Finite Verb. Historically the forms of the Infinitive are in their origin substantival. In Sanskrit the Infinitive in the later language ends in *-tum* or *-itum*, e.g. from $\sqrt{i}$ (to go), infin. *étum*. But in the Veda and Brāhmaṇa 'a number of verbal nouns in various of their cases are used in constructions which assimilate them to the infinitive of other languages' (Whitney, *Sk. Gr.* 969).

Thus from the stem *vidmán* there are the dat. *vidmāne* and the instrumental *vidmánā* (Delbrück, *S. F.* iv. 121). *vidmāne* answers to the Greek infinitive *ἰδμεναι*. The Sanskrit *dāvāne* again answers to the Greek *δοῦναι* (Cyprian *δοφεναι*) and from the stem *dāvān* there is no other case.

Origin of the infinitive.

As Professor Max Müller (*Chips* iv. 51) says, 'As far as Sanskrit grammar is concerned we may safely cancel the name of infinitive altogether and speak instead boldly of datives and other cases of verbal nouns.' These datives can, like other Sanskrit nouns, govern the same case as the verb, and in them is to be found the origin of the infinitive. We need here only concern ourselves with those terminations which have a corresponding form in Greek. Thus Greek *-μεναι* answers to Sanskrit *-māne*, Greek *-féναι* to Sanskrit *-vāne*, while the Greek infinitives in *-μεν* may stand for the Locatives of stems of which the Dative ending was *-μεναι*. Greek *-σαι* answers to Sanskrit *-se*.

In Sanskrit these case forms expressed purpose and consequence. In Latin too this use of the dative case was common. In Greek the dative was not so employed. Thus in Greek we should have *ᾠρῇ ἐστὶν εὐδεῖν* (not *ὑπνῳ*), but in Latin *munitioni tempus relinquere* (Monro, *H. G.* § 242). Conversely while in Greek we have the infinitive continually used to express purpose and consequence, in Latin this use of the infinitive is almost confined to poetry and in Classical Sanskrit is no longer employed.

In Greek the dat. ending in *-αι* was not preserved in nominal declension, and as the *dativus commodi* was not applied to things, the nominal origin of the Infinitive forms was forgotten and they ceased to be regarded as real case forms. The substantival origin of *δόμεναι* for instance was lost sight of, and it was brought into closer relation with the different verbal stems. As beside *ἔδοσαν* there stood *δῶσονται*, so beside *δόμεναι* there arose *δωσέμεναι*. For the growth of such constructions as the Accusative with the Infinitive in Greek cf. Monro (*H. G.* ch. x.).

The ending *-θαι* appears in *ἦσ-θαι*, *πεφάν-θαι* (for which there is no need to assume *πεφανσθαι*), *ἔστάλ-θαι*, *τετύχ-θαι* of the perfect. With this ending we can compare Sanskrit *-dhyāi* in *bhāra-dhyāi*. This is a dative infinitive of the old language (cf. Whitney, § 976). Terminations of the infinitive.

The ending *-σθαι* stands related to *-θαι* as *-σθε* to *-θε* of the second pers. plur. indicative. This ending appears in different tenses, viz. *τίθε-σθαι*, *θέ-σθαι*, *φέρει-σθαι*, *ιδέ-σθαι*, *λεύ-σθαι*, *λύσα-σθαι*, *λύσε-σθαι* and has become the common Greek form.

The suffix *-μεναι*, which is Epic and Lesbian, appears in *ἰδόμεναι*, *θέ-μεναι*, *γνώ-μεναι*, *μιγή-μεναι* of non-thematic tense-stems; in *εἰπ-έ-μεναι*, etc., of thematic.

The suffix *-μεν*, which may be locative (cf. Sanskrit *kārmāṇ*) appears in *ἵ-μεν*, *δό-μεν*, *τεθνά-μεν* after a short vowel; and in the thematic *εἰπ-έ-μεν*.

The suffix *-εναι* (= *-φεναι*) appears in the Cyprian *δοφεναι*, of unknown accent, Sanskrit *divānē*, *ι-έναι*, *δεδι-έναι*, *εἰδ-έναι* and in many instances where a long vowel points to the absorption of *ε*, as in *δοῦναι*, *θεῖναι*, *σῆναι*, *βῆναι*, *ἀλῶναι*, *ἀῆναι*, etc. Later feeling tended to regard *-ναι* alone as the suffix, as for instance in *διδό-ναι*, *τιθέ-ναι*, *τεθνά-ναι*, etc., of which there is no trace in Homer. There is also no instance in Homer of *-εναι* as an ending of the perfect infin. active, nor in Aeolic or Doric.

-εν is the normal ending of the thematic conjugation—e. g. *ἔχεν*, but in Lesbian *ἔχην*, in Cretan *φέρει-ν*.

Attic *-ειν* before the archonship of Euclides was written *-εν*. There is no certain explanation of this ending. It is usually supposed to stand for *-Fεν*, Sanskrit *-van*, as in *állhvan* of the Veda, *φερε-Fεν*, *φερε-εν*, *φέρειν*. The *-ε-ειν* of Homer is an anomalous ending which may in most cases be written *-ε-εν*; St. *βαλε-*, Inf. *βαλέ-εν*, *βαλεῖν* (cf. Monro, *H. G.* § 85).

The ending *-σαι* of the sigmatic aorist may be compared with Sanskrit *-se* in *ji-ṣé*.

The Parti-
ciple.

As the Infinitive is an abstract noun, the participle takes rank as a Verbal Adjective, verbal in that it implies a predication and goes with the same cases as the finite verb, but nominal in that it cannot by itself form a predication.

Participial
termina-
tions.

There are many different participial suffixes, with some of which we have already dealt in treating of nominal declension.

1. *-ντ-*, *-ητ-*: *λείπων*, *λιπών*, *λείψας*, *λείψων*: fem. in *-ντ-ια*, viz. *λειπούσα* (= *λιπονιχα*), *λείψασα*.

2. *-Fός*, *-νία* (or *-Fεία*), *-Fός*; cf. p. 312.

3. *-μενο-*, middle suffix of all tenses. It is identical with the reduced *-μνο-* of *βέλε-μνον*, Latin *-mino-*, *-mno-*, Sanskrit *-māna-*. The rule of the vowel variation of the stem is not clear.

4. *-το-*, as in *κλυ-τό-ς*, Sanskrit *ḥru-tá-s*, which is mainly adjectival.

5. *-τεο-*, *δο-τέο-ς*.

6. *-νο-*, with the same meaning as *-το-*, was once a participial suffix, but in Greek is purely adjectival, as in *στυγ-νό-ς*, *σεμ-νό-ς* (*σεβ-νο-ς*), *στεγ-νό-ς*, *ἀγνό-ς*, Sanskrit *bhug-ná-s*, Latin *ple-nu-s*, etc.

7. *-χο-*, in the adjectives *ἄγ-ιο-ς*, *στύγ-ιο-ς*, Sanskrit *-īya-*, Latin *exim-īu-s*.

The Latin
System of
Verb-
inflection.

The Latin system of verb-inflection is very different both from that of Greek and that of the original Indo-European language. The chief characteristics are as follow:—

(i) The secondary person-endings have mostly superseded the primary: the majority of Latin person-endings correspond

to the Greek terminations *-v*, *-s*, *-(τ)*, rather than to *-μ*, *-σ*, *-τ*.

(ii) The system has lost the augment (or at any rate the syllabic augment), and consequently the simple imperfect, and the simple thematic and non-thematic aorists. The aorist-stem, as in Greek, often appears in the system of the present (p. 388).

(iii) The middle formations have disappeared, and in their place we have a passive in *-r*, which is also found in Celtic.

(iv) The sigmatic aorist is changed both in form and meaning: in meaning it has come to partly coincide with the perfect, and hence the future perfect and pluperfect are formed from this stem.

(v) The future in *-so* has almost entirely disappeared.

From this it will be seen that of the four original stem-systems in the Indo-European verb, the present, aorist, perfect, and future, the present system alone in Latin has remained intact.

The person-endings are as follows:—1st sing. The primary termination in non-thematic verbs is *-m* (for *-mi*), in thematic verbs *-ō*. The Person-endings, Active Voice, 1st sing.

Of these *-m(i)* is kept only in *sum* for *ésmi* (cf. Dor. *ἐσμι*), which on the analogy of the plural became *sm(i)*, *sm̃* and *sum* (p. 447). For the loss of final *-i* we may compare *et* (Greek *ἐτ*), *ut* (*uti*, Umbr. *ute*), *tot* (cf. *toti-dem*, Sanskrit *táti*), *ob* (Greek *ἐπ*), *ad* (Sanskrit *ádhi*), *per* (*περ*), *super* (cf. *ὑπέρ*, Sanskrit *úpari*), etc. *-m* in the historic tenses (*credeba-m*) and the subjunctive (*creda-m*) is the secondary termination, and represents an original *-m*, not *-mi*. For *inquam* cf. p. 447.

As to the termination *-ō*, the explanation given by Schleicher was that it represented an original *-ōmi*, *-ōm*. This however is phonetically impossible, and the corresponding Greek form *ἰθίλωμι*, so often quoted, is perhaps itself the result of analogy. In some presents in the Avesta we find *-ā*, which also appears in some Vedic subjunctives (*brávā*, *stávā*): in Greek *-ω*, in Latin *-ō* are universal, and traces of the same termination are also found in the Celtic and Germanic languages. It is clear therefore that the termination is primitive, and possibly *fer-ō* may be by prehistoric contraction for *fer-o-a*, where *-o* is the thematic

vowel, while *-a* may be identical with the termination of the Greek perfect (*M. U.* i. 140, ii. 121, *Z. G. d. P.* p. 61).

2nd sing. 2nd sing. The termination in both primary and secondary tenses is *-s*, the loss of *-i* having obliterated the distinction.

3rd sing. 3rd sing. The termination is *-t(i)*, *-t*.

The occasional appearance of a long vowel before the termination of the 2nd and of the 3rd sing. in the 3rd conjugation is purely metrical. The lengthening is only found in the caesura, and does not point to an originally long final syllable any more than *fatigamūs* (*Aen.* 9. 610). In cases like *amāt*, *habēt*, *redīt*, however, it is possible that it may be a survival of the original contraction from *amajit*, *habejit*, *redejit* (*M. U.* i. 174, note).

The following list of instances of this lengthening may be useful. *Lucr.* 2. 27, 4. 337; *Virg. Ecl.* 3. 97, 7. 23; *Georg.* 2. 211; *Aen.* 1. 308, 5. 167, 480, 853, 8. 363, 9. 9, 10. 67, 433, 12. 883; *Hor. Od.* 1. 3. 36, 1. 13. 6, 2. 2. 14, 2. 13. 16, 3. 5. 17, 3. 16. 26, 3. 24. 5; *Sat.* 1. 4. 82, 1. 5. 90, 1. 9. 21, 2. 1. 82, 2. 2. 47, 2. 3. 260; *Prop.* 1. 10. 23; *Ov. Met.* 3. 184, 6. 658, 9. 611, 12. 392; *Her.* 9. 141; *Ep. ex Pont.* 1. 3. 74, 1. 4. 46; *Val. Flacc.* 8. 259; *-mūs* occurs in *Plaut. Curc.* 438; *Virg. Aen.* 9. 610; *Ov. Met.* 14. 250.

1st plural. 1st plural. The termination is *-mos*, *-mus*: we may compare the Doric *-μες*, but the difference of the vowel is a difficulty (cf. *Cerer-us* beside *senatu-is*).

2nd plural. 2nd plural. Termination *-tis*. This is probably in origin a dual form; cf. the Sanskrit dual *vāka-thas*. The proper plural termination is kept in the imperative termination *-te* (cf. *este*, *ἐστέ*).

3rd plural. 3rd plural. Termination *-nt(i)*, or with the thematic vowel *-o-nt*. In the case of the thematic verbs of the first and second conjugation we get a new form *ama-nt*, *doce-nt* (for a more regular *ama-o-nt*, *doce-o-nt*, cf. *fini-o-nt*, *statu-o-nt*), formed apparently on the analogy of *ama-s*, *ama-t*, *doce-s*, *doce-t*, etc.

The forms of the 1st conjugation may all have originated in a contraction (cf. $\tau\mu\acute{\alpha}\omega = \tau\mu\omega$. *M. U.* i. 87); but in the 2nd conjugation it is hard to see how *docent* can be a contraction of *doce-ont*. *Johansson de Verbis Contractis*, p. 192 sqq., takes the inflexion of the present of the 1st and 2nd conj. to be non-thematic throughout.

It will be noticed that the primary and secondary terminations have everywhere coalesced in Latin, as they do in Greek in 1st and 2nd plural (-μεν, -τε).

The old explanation of the passive termination -r was that it was a relic of the reflexive pronoun *se*, originally appended to the active voice to transform it to a middle. This theory was not in itself improbable, and finds its analogy in the Scandinavian languages, where the passive is formed by the addition of -s, or in older times -sk, i. e. the reflexive pronoun *sik* (Westphal, *Verbalflexion*, p. 25), cf. the English *ba-sk*, *bu-sk*. Unfortunately, however, this theory is not in agreement with the facts of the related languages. The -s in Latin might pass between vowels into r (cf. *honor*, *honor-is*), but the same -r is found as a termination of the passive in Celtic, which does not 'rhotacise' an s. r is also found in Oscan, but there an s between vowels becomes z. The -r of *honor*, for and by the side of *honor*, is to be explained not as the direct result of rhotacism, but as due to the analogy of the oblique cases where s becomes r between vowels. We do not find -r in *genus* beside *generis*.

It is clear therefore that the -r of the passive can have nothing whatever to do with the reflexive pronoun. But no explanation of it has yet been found. In Sanskrit the 3rd plur. of the perf. middle ends in -re, and in the Veda other verbal terminations containing r are found (Whitney, *Sk. Gr.* § 550). It is now thought that this r may have been extended by analogy from the 3rd plural, in the first instance to the 3rd sing. and then to the other persons and members. But this is a mere conjecture.

The forms *legitur*, *leguntur* seem identical with the Greek middles (ἐ)-λέγετο, (ἐ)-λέγοντο with the addition of the Latin passive suffix -r; but if this is so, the secondary suffixes (Gk. -το, -ντο) have superseded the primary (Gk. -ται, -νται) in the present tense in Latin. In the 2nd sing. corresponding to the Greek (ἐ)-λέγεσο (ἐλέγῃς) we should expect in Latin *leges-r*, which might become *leges-r*, *leges-e-r*, *leger-e-r* by

successive steps, the *e* appearing before *r* in the same way as in *ag-e-r* (p. 71). The final *s* of the existing form *legeris* may be due to the analogy of the 2nd sing. of the active. In *lego-r*, *legimu-r* the suffix *r* is attached immediately to the active forms (*lego*, *legimus*).

Legimini is a participial and not a verbal form, and corresponds to the Greek λεγόμενοι; *legeremini*, *legamini* will then be formed by analogy. The old forms of the 2nd and 3rd sing. imper. *fruimino*, *antestamino*, *famino* (*appellamino* is plur., Cic. *de Legg.* 3. 3. 8) are said to be not for **fruimino-s*, etc., but formed as singulars of the type *fruimini*, as we have a sing. *vehito* beside a plur. *vehite*. The analogy is not complete, but on the imper. see p. 433.

System of
Inflexion.

The system of inflexion in each Latin verb may be divided into four groups—

- (i) The inflexion of those tenses derived from the present stem (presents of all moods and voices, active participle, infin., act. and pass. and gerund).
- (ii) The inflexions of the perfect stem (perf., fut.-perf. and plupf. in many verbs).
- (iii) The inflexions of the sigmatic aorist.
- (iv) The inflexions of the future and imperf. in *b*.

Present
System.

The present stems of verbs in Latin may be classified as follow:—

1. Non-thematic verbs—of which however traces survive only in a few isolated forms still left in systems that otherwise have become thematic—*ēs* (*ēd-s*), *ēs* (*ēs-s*), *es-t*, *fer-s*, *fert*, etc.

2. Thematic verbs—

(i) the thematic vowel is added to the simple stem in its strong or weak degree—(*dūco*, *āgo*).

(ii) the thematic vowel is added to the reduplicated stem (*si-st-o*).

(iii) the *T*-class (*flec-t-o*).

(iv) the Nasal class (*cer-n-o*).

(v) the Inceptives (*po-sc-o*).

(vi) the *Yod*-class, whether radical (*fug-i-o*,

ama-i-o), causative (*mon-ei-o*), or denominative (*statu-i-o*). To this class belong all verbs of the 1st, 2nd, and 4th conjugations, and all those of the 3rd whose 1st sing. pres. indic. ends in *-io* or *-uo*.

The above classes all find their parallel in Greek (p. 389). But the Greek non-thematic verbs in *-vv-*, *-va-* (classes 3 and 4) have become thematic in Latin (*ster-nu-o*, *con-ster-na-re*). Latin has also a few verbs formed by means of suffixes not found in Greek, of the types *cape-ss-o*, *dic-ta-re*, *dic-ti-ta-re*, *ster-nu-ta-re*, *es-uri-o*.

The thematic vowel is either *ō* or *ē* (cf. p. 374). *ō* (*u*) appears in the 1st pers. sing. and plur. and the 3rd pers. plur., *e* (Latin *i*) elsewhere (De Sauss. p. 87).

Non-thematic verbs becoming thematic.

Thus we have—

ἔχω ἔχ-ο-μεν ἔχ-ο-ντι ἔχ-ε-τε *ἔχ-ε-σι *ἔχ-ε-τι
ve-ho veh-i-mus veh-o-nt veh-i-te veh-i-s veh-i-t;
(but cf. vol-u-mus.)

True non-thematic verbs are very rare in Latin, and even where they occur, are assimilated in form to the thematic conjugation. *fū-ri* is still non-thematic (cf. *φά-ναι*); but on the other hand *-ple-o* (cf. *πίμ-πλη-μι*), *si-st-o* (cf. *ἴ-στη-μι*), *ser-o* (for *si-s-o*, cf. *(σ)ί-(σ)η-μι*), *sternu-o* (cf. *πτάρνυ-μαι*), *stern-o* (cf. *στόρνυ-μι*) have all taken the termination of the thematic inflexion.

The assimilation to the thematic conjugation probably started from the plurals *sistimus* (for *sī-stū-mos*, cf. *ἴσῳμεν*), *serimus* (for *sī-sa-mos*, cf. *ἴεμεν*), which look like thematic forms from stems *sist-*, *ser-*. We should have expected an inflexion—

si-stām(i) *si-stā-s(i)* *si-stā-mós*.

Cf. *ἴ-σῳ-μι* *ἴ-σῳ-s* *ἴσῳ-μεν*.

And *se-rē-m* (for *si-sē-m*) *se-rē-s* *se-rā-mos* (*si-sā-mos*).

Cf. *(σ)ί-(σ)η-μι* *(σ)ί-(σ)η-s* *(σ)ί(σ)ε-μεν*.

But *sīsūmos*, *sistūmos* become regularly *serimus*, *sistimus* (cf. *Júpiter* and *Ζεὺ πάτερ*, *cóncipit* and *cápit*, *ádditus* and *dátus*), and hence the whole system was assimilated to the type *verto*, *vertimus*, etc.

A somewhat similar case is the passing of the compounds of

dare to the 3rd conjugation, *addāmus*, e. g. became *addimus*, whence was formed *addo*, *addunt*, etc.

Similarly there may once have existed a form—

<i>ster-nā-m</i>	<i>ster-nā-s</i>	<i>ster-nā-t</i>	<i>ster-nā-mos.</i>
Cf. <i>δάμ-νā-μι</i>	<i>δάμ-νā-s</i>	<i>δάμ-νā-σι</i>	<i>δάμ-νā-μεν.</i>
Sk. <i>stṛ-ṇā-mi</i>	<i>stṛ-ṇā-si</i>	<i>stṛ-ṇā-ti</i>	<i>stṛ-ṇīmās.</i>

(Whitney, *Sk. Gr.* § 718.)

The singular, it is said, gave rise to *consternāre*, *exsternāre*, the plural to *sternere*. (This may be doubted in this particular case, as *consternare* is probably identical in root with Greek *πύρεσθαι*, but it is true of *spernere* beside *aspernari*.) (Osthoff, *Z. G. d. P.* p. 245.)

Compare in Greek *ἄνω* beside *άνώ*, *κάμνω* beside *δάμνημι*.

We will now consider these two classes separately.

I. Non-thematic Conjugation.

(i) Stems ending in a vowel.

(a) Strong root *ei*, weak root *i*, in *eo*, Sanskrit *émi*, *imās*, Greek *εἶμι*, *ἴμεν*. Greek and Sanskrit show the regular Ablaut between the singular and plural. In Latin the strong stem *ei* or *i* is extended to all numbers and tenses (*imus*, *itur*, *ibo* for *eimus*, *eitur*, etc.), the weak stem being found only in the principles *ī-tus*, and *-iens* for *i-ī-ūt-s*. The strong stem reappears in the oblique cases of the pres. part., as *euntis* for *ei-ontis*.

Parallel to *eo* are *queo*, *nequeo*. In all three the 1st sing. pres. indic. has been assimilated to the thematic conjugation.

(b) Strong root *dā*, weak root *dā*, in *dās*, **dāt*, *dā-mus*, *dātis*, *dā-tus*. The *ā* seems to represent the *śarabhlākti* vowel (cf. Greek *δορός*), of which *ā* is the ordinary Latin representative (cf. *cālus*, *rātus*, *slātus*, etc.). It is possible that *dō* may be an 'aorist present,' for the absence of reduplication by the side of *δίδωμι* is noticeable. There may have once been a strong aorist **(e)dom* beside **ēδων* (cf. *έδομεν*, etc.), corresponding to a possible **(e)stīm* beside *έστην*. Then *(e)dom* may have passed to the present system, like *ἄγω* beside *ἤγ-ᾶγον*, and in part to the thematic conjugation.

Non-thematic conjugation.
Root *ei*, *i*.

Root *dā*,
dā.

(ii) Stems ending in a consonant.

(a) Strong root *es*, weak root *s*.

Root *es*, *s*.

The original present would have been—

és-m *és-s* *és-t* *s-mós* *s-tés* *s-ñt*.

Cf. *ēs-mí* *ēs-sí* *ēs-rí* Sk. *s-más* *s-thá* *s-ánti*.

ēs-s became regularly *ēs*, and this quantity is invariably kept in Plautus.

**smus* is unpronounceable, and therefore takes a *svarabhākti* vowel, which under the influence of the following consonant is *u*, so we get *su-m-us*. Then this form in turn influences the first person singular, and we get *sum* for the more regular **sem* (*sm*), and eventually the 3rd plural (*sunt* for **sent*, *snt*), though in this case the analogy of the thematic conjugation (e.g. *reg-o-nt*) may have operated. The Umbrian 3rd plural is *sent*.

The weak root appears irregularly in the 1st sing. on the analogy of the 1st plur. (*sum* for **esum*), and the strong root in the 2nd plur. on the analogy of the 2nd and 3rd sing. (*es-tis* for **s-tis*). But Osthoff (*M. U.* iv, *Einleitung*, p. vi) is of opinion that *es-tis* beside Sanskrit *s-thā*, *ē(σ)-tē-v* beside *s-iē-m*, may both represent original forms of the reduced root, *es-* being the form under the secondary accent (Ablaut III, here identical in form with Ablaut II), *s*, the unaccented form (Ablaut IV). The difference between the two would then be due to a difference of function in the sentence. The enclitic form (unaccented) appears in e.g. *necesse 'st*, which would stand to *necesse est* as e.g. *Zeús ēsti* to *Zeús ēsti*. So, too, *pollicitus 's* (written *pollicitus*) is the enclitic form of *pollicitus es*.

Ero for **eso* is a subjunctive, and corresponds to the Greek *ῶ*, *ῷ* (for **ēsō*).

In the case of *erām* the stem *erā-* may possibly be distinguished into *e-s-ā-*, where *e* is the augment, *ā* is a root determinative added to the weakest form of the root¹. *E-s-ā-m* would then be parallel to *inquam*, which is an imperfect

¹ A list of such additions of *ā* to weak roots is given in *M. U.* i. 35. We may quote *hi-āre* beside *hi-sco*; *i-ā-nus* beside *eio*, *i-tus*; *r-ā-mus* beside *ēp-ēsō* etc. But most of them are more ingenious than probable.

in origin and stands for *in-squ-ā-m* (cf. *ἐν-σπ-ῆ-σω*. *Inquit* is an aorist for *in-squ-i-t*; cf. *ἐν-σπ-ε*).

The so-called pres. subj. is in reality an optative; the original inflexion was—

s-iē-m	s-iē-s	s-iē-t	s-i-mus	s-i-te	s-i-nt.
Cf. <i>ἐ(σ)-ίη-ν</i>	<i>ἐ(σ)ίη-ς</i>	<i>ἐ(σ)-ίη-(τ)</i>	<i>ἐ(σ)-ῖ-μεν</i>	<i>ἐ(σ)ῖ-τε</i>	<i>ἐ(σ)ῖ-εν</i> .
Sk. <i>s-yā-m</i>	<i>syās</i>	<i>syāt</i>	<i>syāma</i>	<i>syāta</i>	<i>syūs</i> .

Siem still survives in Old Latin, but in classical times the weak root has been extended throughout the tense. The loss of the initial *e* may be due to the influence of the indicative.

The present participle is quite regular in *prae-sens*, *ab-sens*, *con-sentes*, except that the weak form of the root (*snt-*) has been extended throughout.

Ens is a later barbarism (Quint. 8. 3. 33).

Escit seems to be an inceptive form, standing for *es-scit*; cf. *ἐσκε*.

Possum (older *potis sum*) is a compound, and the existing forms may be the result of contraction. Thus *potissit* became *poti'sit*, *potisit*, then *pot'sit*, and finally *possit*. But *potest* (whether for *pot'est* or *pote'st*, with the enclitic form of the verb) is quite regular, and this form may have originated the tendency to assimilate the inflexion to that of the substantive verb (cf. Lachmann on Lucr. 5. 880).

Potui, *potens*, *potin* (for *potis-ne*) imply a form **potěre*, **potire* (cf. *potīri* beside *potitur*), or **potěre*.

Root *ed*. (b) Root *ed*.

The forms *ēs* (for *ēd-s*), *ēst* (for *ed-t*), *estis* (*ed-tis*), *esto* (*ed-to*), *esse* (*ed-se*), *ēd-im* are non-thematic, cf. *ἐδ-μεναι*: but the rest of the verb has passed to the thematic conjugation. It is possible that the reduced root may be seen in *dens* for *d-ēt-s*, a present participle parallel to *-sens* (cf. p. 307).

Root *fer*. (c) Root *fer*-. This root is non-thematic in *fer-t*, *fer-tis*,

fer-te (cf. φέρ-τε) *fer-to*, *fer-re* (for *fer-se*). The other forms of the verb are thematic.

(d) Root *vol-*, *vel-* is non-thematic in *vol-t*, *vol-tis*, *vel-le* (for *Root vel, vel-se*). (For the law governing the interchange of *e* and *o*, *Root vel*, v. p. 189.)

With this may be classed *nolo* (for *neyolo*), *malo* (for *mag(e)-uolo*).

The 2nd sing. pres. ind. of the last two verbs present some difficulty. The root *fer* should make **fer-si* (Vedic *bhár-si*), which in Latin could only become **ferrĭ*, *ferre* (the final *ĭ* becoming *ĕ*, as in *marĕ*, stem *marĭ-*). The final *-s* of *fer-s* must therefore be on the analogy of all other second persons singular. *Vis* is obscure.

The imperatives *fer*, *vel*, with *ēs*, *ēs* are pseudo-conjunctives (cf. p. 433, *M. U.* iii. 9); *fer* is for **fer-s* which would become **ferr* and *fer*, so *ēs* for **ēs-s*, *ēs* for **ĕd-s*, *vel* for **vel-s* (= **vell* = *vel*).

The forms *cette* (for *ced-te*), *can-te* (*Carm. Arv.*), *cedre* (*cedere*) are more probably syncopated than originally non-thematic.

We may now pass to—

II. The Thematic conjugation—

(1) Verbs with the present stem formed simply by the addition of the thematic vowels *o*, *e* (*i*).

These fall into two main subdivisions, the Imperfect Presents and the Aorist Presents (cf. p. 233).

The Thematic conjugation.
Simple thematic presents.

The distinction between Imperfect and Aorist Presents is really implied in the remarks of Westphal (*Verbalflexion*, p. 129) on the quantity of the stem-vowels of Latin presents. His observations may be of some practical value.

1. Presents formed simply by the addition of the thematic vowel to the stem and containing the vowels *i*, *u*, followed by a consonant, have this vowel long. These are what we should now call imperfect presents. The only exceptions are [*fūre*], *rūdere* (but *rūdere* Pers. 3. 9.) *fūrere*, *dividere*.

But if the stem is increased by *-ao*, *-eo*, *-io*, *-uo*, *i* and *u* are short. Exceptions are *strideo* beside *strido*, etc., and presents of the second conjugation with a perfect in *-si* (*rideo*, etc.): but here the perfect and often other forms point to original simple present stems, as *frig-us* to a form **frigo* beside *frige-o*. But *jūbeo* has short *ū*, though the perf. is *jussi*.

2. Simple verbs with the stem ending in a consonant and containing the

vowels *a, e, o* have the vowel short, and often the stem is nasalised. Exceptions are *rādo, vādo, lābor*, (but *lābo*), *rēpo, cēdo, rōdo*. The forms with *ā* are aorist presents, those with *ē, ō, ē, ā, ō* are imperfect presents. (Ablaut II.)

Verbs derived from nouns have a long vowel, *flāveo, flōreo, tābeo*, also *āreo, pāreo*, which cannot be classed as denominatives. But presents not derived from nouns have the vowel short, *āmo, mōneo*, etc.

We may now resume our classification :—

Imperfect
presents.

(a) Present stems with strong root (imperfect presents) corresponding to Sanskrit 1st verbal class which is paroxytone, e. g. *bhūva*, from $\sqrt{bhū}$ (cf. p. 405).

Simple verbs with stem containing *ě*:—*lego, tego, veho, peto, frendo, pendo, -fendo, pre-hendo* (the reduced root is seen in *ἐχᾶδον* for *ἐ-χῆδ-ον*, cf. *χέισομαι* for *χενδ-σομαι*), *sterto, vergo*, etc.

Stems with corresponding derivative forms:—*striděre* (*striděre*), *tergěre* (*tergěre*), *soněre* (*sonāre*), *fervěre* (*fervěre*), *lavěre* (*lavāre*), *fulgěre* (*fulgěre*).

Stems that have passed entirely into the derived conjugation:—*crěp-are, vět-are, sěc-are, těn-ere, měr-ere*.

Stems with diphthongs:—*douco* (for **deuco*), *feido* (cf. *πειθω*), *ūro* (for **euso*, cf. *εῦω*), *lūdo* (**loido*), *claudo, plaudo, laedo, caedo*.

Stems with *ī, ū* (which cannot be proved to be reduced forms):—*flīgo* (cf. *θλίβω*), *fīgo, glūbo* (cf. *γλύφω*).

Stems with *ā, ē, ō*:—*rādo, vādo, suādeo* (derived form), *cēdo, rōdo, rēpo, lābor*.

Aorist
presents.

(b) Present stems with weak root (aorist presents):—corresponding to 6th Sanskrit class, which is oxytone, e. g. *surá* from $\sqrt{sū}$.

rūdo, nīvit (cf. *νίφερός*), *divīdo, āgo, ālo, scābo, fūrere, tāgo, pāgo, scāto, cāno, cādo, ōlo, lōquor*, etc.

Redupli-
cated pre-
sents.

(2) Present stems with *reduplication*. The reduplication is prefixed to the weakest form of the root.

gi-gn-o (Old Latin *geno*, cf. *gen-i-tus*), *sīdo* (for *si-sd-o*, cf. *ίζω* for *σι-σδ-ω*), *disco* (for *di-de-sco*, cf. *di-dic-i*), *si-st-o*, *bi-b-o, se-r-o* (for *sī-s-o*). The last three were originally non-

thematic; cf. (σ)ι-στα-μι, (σ)ι-(σ)η-μι, Sanskrit *pi-lā-mi* and *v.* supra, p. 445.

(3) *T*-Class: the present-stem is formed by adding *-t-*, *-te-* Presents with *-t*. to the verb-stem. The stem is thus often identical with that of the past participle of the simple verb.

Flec-to, pec-to, nec-to, plec-to, viso (for vid-to, *M.U.* iv. 77), bē-tere, mē-tere (cf. ἀ-μᾶ-ειν, but the relation is obscure), fā-te-or (fā-ri), fā-tiscor (cf. χᾶ-σκω, ad-fā-t-im).

The stem of these verbs seems sometimes to be strong, sometimes weak (cf. fūteor but flecto).

Bītēre has nothing to do with ἀμφισβητῶ with which it is often compared. The imperfect ἡμφε-σβήτουν shows that in this last the root is σβη, Indo-European *sq-ā* from a *√saq*, seen in Sanskrit *sajati* (*M. U.* i. 22).

(4) Nasal Class:—

This again may be subdivided into two groups—

Nasalised presents.

(a) Those in which the suffix *-no*, *-ne* is added to the root, Presents with added nasal. originally in its reduced form. These verbs may originally have been non-thematic and correspond to the 5th Sanskrit class of the type *su-nu* from *√su-* and to the Greek forms like στόρ-νυ-μι (cf. *ster-nu-o*: πτόρ-νυ-μαι). But all have passed into the thematic system:—

cer-no (κρί-νω: for *-er-* in Latin, *v.* p. 192).

ster-no (cf. *stra-tus*).

sper-no (cf. *sprē-tus*).

tem-no (τῆ-νό?).

fruniscor for früg-ni-scor, cf. früg-es.

deguno for de-gus-no, cf. γεύ(σ)ω.

So with the *-n-* assimilated to the preceding consonant we have:—Tollo (τῆ-νό?), vello, fallo, pello, -cello, cillo, pro-mello. Cf. *li-no*, *si-no*.

In old Latin we have *solinunt* (cf. λιμπ-άνω), *dā-nunt*, *inser-i-nuntur*.

(b) The nasal appears within the body of the root. This Presents with inserted nasal. mysterious class of verbs corresponds to the Indian 7th class of the type *rundh* *√rudh*. The root appears in the reduced form. In Greek we have the type λα-μ-β-άν-ω *√λαβ* (p. 416).

In Latin *fī-n-do*, *scī-n-do*, *pū-n-go*, *rū-m-po*, *tū-n-do*, *jū-n-go*, *ā-n-go* (cf. *ἀχ-ος*), *fū-n-gor* (Fick, i. 161), *nū-n-guit* (cf. *nir-√snighu-*), *mung-it* (*muc-us*), *pi-n-go*, etc.

We find nasalised weak and unnasalised strong forms side by side in *meio* (*meih-o*) and *mi-n-go* (cf. *δ-μλχ-λη*), *λείπω* and *li-n-quo*, *ζεύ-ν-μι* and *jū-n-go*, *πήγ-ν-μι* and *pān-go*, *véλει* and *nū-n-git*, etc.

In the majority of cases the nasal is confined to the pres. system, but in *fungor*, *jungo*, *ango*, etc., it is carried throughout the verbal system.

Inceptive presents.

(5) Inceptive or *sk*-class.

-sco-, *-sce-* is added to the weak root, either :—

Inceptives from simple stems.

(a) Immediately to the simple root in—

hi-sco, *pa-sco*, *gli-sco*, *crē-sco* (where the root is *cer-* in *Cer-es* and the long vowel is due to metathesis, cf. p. 115), *disco* (perhaps we may put together *doc-eo*, *dec-et*, *di-de-sco* as a regular Ablaut), *misceo* (for *mig-sceo*, cf. *μίσγειν* for *μικ-σκεν* (?)), *posco* (for *porc-sco*, *prc-sco*, cf. *proc-us*, *precor*).

Gnā-scor, *gno-sco* are difficult. The full root of *gnosco* is seen in the Gothic *kannen* beside *kunnan* (*kñnan*), but in Greek and Latin we get only the metathesised form *gnō-* with a long vowel. A short vowel may, however, be seen in *ἀμφι-γνοέω*, *νοῦς* (for **γνοFos*, cf. *gnāvus*), *nō-ta*, *a-gnītus*. In these words, however, the root may be different, and the guttural due to the same confusion that we get in *co-gnōmen* beside *nōmen* (*M. U.* i. 47).

Gnā-scor again cannot well be separated from the root *γεν* in *γένος*, but a confusion with *gnosco* seems most probable. In Homer we have *γυνωρός*, 'a blood relation,' and *γυνωρός* is to *gnātus* as *στρωρός* to *strātus*, both apparently showing long sonants (*De Sauss.* pp. 108, 138). On the other hand we get *κατ-γνητος*, *γνήσιος*, etc., with *η* everywhere in Greek, to which corresponds the Latin *ā* in *gnātus*.

It is possible there may be a triple Ablaut of the *√gnō*, (i) *gnō* in *gnō-sco*; (ii) *gñ* in *gnā-rus*; (iii) *gñ* in *in-gens* for

ŋ-gŋ-tt, properly 'that which is unknown, unusual' (*K. Z.* xxviii. 281, note).

(b) The suffixes *-sce-*, *-sco-* are added to secondary roots.

(i) To the stems of thematic verbs, *api-scor*, *gemi-sco*, etc.

Inceptives
from
secondary
stems.

Tremēsko, (*Aen.* 5. 694) is formed on the analogy of *horrēsko*, *pavēsko*, etc. (*M. U.* iii. 81), which have stems in *ē*.

(ii) To the stems of derived verbs in *-ao*, *-eo*, *-io*, in *con-cupī-sco*, *labā-sco*, *ardē-sco*, *scī-sco*.

Scio (*scī-ŋ-o*) is to *scī-sco* as *βαίνω* to *βά-σχω*: so we have *dormio* and *obdormīsko*, *resipio* and *resipīsko*, **apio* (?) and *apīsko*.

The *i* in all these forms is naturally long (cf. Italian *capisco*, which, if the *i* in Latin had been short, would have been *capesco* p. 208, *Z. G. d. P.* 257), and they must consequently be from verbs of the 4th conjugation. Forms like *expergīscor*, *pacīscor*, *contremīsko*, etc., where there is no corresponding verb of the 4th conjugation, must be the result of analogy. Finally on the analogy of this class we get those inceptives where the suffix is added to—

(iii) The stems of nouns, but with a preceding long vowel which is often not part of the noun-stem proper: *inveterāsko*, *puerāsko*, *dilēsko*, *quiēsko*, *mitēsko*. These are formed as if from a **veterare*, etc., which however does not actually exist.

Inceptives
from stems
of nouns.

Contrast the short vowel in the Greek *κορέσχω*, *ἀρέσχω*.

(6) The *Yod*-Class of verbs forms its present stem by *Yod*-pre-adding *io*, *ie* to the root, which generally appears in the ^{sents.} reduced form. Thus—

farc-io, cf. *φράσσω* for *φρακ-χω*.

rug-io, cf. *ρύζω* for *ρυγ-χω*.

sal-io, cf. *ἄλλομαι* for *σαλ-ιο-μαι*.

ven-io for *vm-io*, cf. *βαίνω*, Indo-European *g-ŋ-ŋo*.

mug-io, cf. *μύζω* for *μυγ-χω*.

sario, cf. *σαίρω*.

am-icīre for *am-icī-ire*, cf. *iacio*, *ob-icio*.

comperire, beside *par-ēre*.

iacio, cf. *ιάπ-τω* ✓ *ἰαγ*.

But the forms *evenat*, *advenat* in Plautus (cf. Brix, *ad Trin.* l. 41) are aorist presents formed with the simple stem.

Under this head must be classed a variety of verbs in *-io*, which may be grouped as follows:—

(i) Radicals, *cupio*, *fugio*, *fodio*, *pario*, etc.

(ii) Denominatives:—

(a) From stems in *-o-*, *saevio*, *servio*, *largior*, etc.

(b) From stems in *-a-*, *punio*, *bullio*.

(c) From stems in *-i-*, *vestio*, *finio*, *sitio*, etc.

(d) From stems in *-u-*, *singultio*.

(e) From consonant-stems, *custodio*, *impedio* (*nutrio*?).

But in the inflexion of these words we get a constant confusion between the simple and the derived stems. Thus *cap-is*, *cap-it* (if not for *capī-es*, *capī-et* as *reīce* for *reīce*) seem to be formed from the simple stem *cap-*, not from the secondary stem *capī-*. On the other hand the stem *saevī-*, e.g. in *saevio*, has passed entirely to the 4th conjugation from the analogy of stems in *-ī* like *audī-*.

Generally it is true that the perfect system is formed from the simple, the present system from the derived stem; thus we have *salui* (stem *sal-*), but *salio* (stem *sali-*), *sonui* (stem *son-*), but *sonare* (stem *sonā-*).

But the reverse is the case in *petivi* (stem *petī-*) beside *pet-ēre* and in *pot-ī-ri* beside *potī-tur*. Other verbs in which this confusion of simple stems and stems with *ī* has taken place are *orior*, *morior*, *gradior*, *fodio*, *cupio*. In *parāre* beside *parēre*, we have two distinct stems from the same root, each with a full verbal system.

Under the head of the *yod*-stems must also be put the whole of the verbs of the so-called first, second, and fourth conjugation, as well as those of the third whose presents end in *-uo*. Thus—

am-o is for *amā-jo*, cf. *τιμά-ω* for *τιμά-ιω*.

mone-o is for *monē-jo*, cf. *φιλέ-ω* for *φιλε-ιω*.

audi-o is for *audī-jo*, cf. *κονίω* for *κονι-ιω*.

statuo is for *statu-jo*, cf. *μεθύ-ω* for *μεθυ-ιω*.

There are no verbs in *-oo* in Latin corresponding to those in

-*ow* (-*oiō*) in Greek. In Latin the corresponding forms appear in -*āo*, e. g.—

ψιλόω : pilā-re.

ἀρόω : arā-re.

ζευγόω : jugū-re.

aegrōtus looks like a past part. of **aegroo*.

But even in these derived verbs we get a variation of stem in different forms, as in—

viole-ntus and viola-re.

cale-ndae and cala-re.

λοέ-ω and lavā-re or lav-ěre.

navā-re and navī-re, etc.

Horreo, torreo, maileo, oleo seem to be properly verbs in -*io* or to have had once corresponding forms with -*io* added to the simple stem; cf. Sanskrit *hṛsy-ati, tṛsy-ati, mād-ati, ḍṣw* for *ḍḍ-ṣw* (*Mém. Soc. Ling.* iii. 279).

With regard to the derived verbs in -*eo*, -*io* it may be noticed that they are partly derived from nouns (*flaveo, finio*), and partly causative (*monéo, scopio*), and that of denominative verbs those in -*eo* are intransitive (e. g. *albeo*), those in -*io* are transitive (*denso*).

We now pass to the Perfect system, with which must be classed the system of the Sigmatic Aorist.

Perfect System.

The reduplicated perfect, which is characteristic of Greek, is comparatively rare in Latin. The following is a list of those found:—pependi, tetendi, momordi, totondi, spopondi, poposci, didici, cucurri, pupugi, tutudi, seicidi, pepēdi, pepigi, tetigi, cecini, cecīdi, cecīdi, peperī, fefelli, peperci, ste-t-i, de-d-i, (tetuli), (tetini), bi-b-i, sti-t-i, didici.

The reduplicated Perfect.

It may be noticed that reduplication is not peculiar to the perfect system in the verb, but is also found in the present stem. There is, however, this difference, that the vowel in reduplication was originally in the case of the present stem *i* in the case of the perfect, *e* (cf. *τί-θη-μι* but *τέ-θει-κα* *K. Z.* xxv. 32, 74). Forms then like *pu-pug-i* beside *pe-pig-i*, *spo-(s)pondi*, *mo-mordi* beside the older *spepondi*, *memordi* (*Aul. Gell.* 7. 9) are to be explained as the result of assimilation to the stemvowel, or as Osthoff (*Z. G. d. P.* 271) prefers

The vowel of reduplication.

to say, *momordi*, etc., are formed on the analogy of *pendi*, etc., where the vowel of stem and reduplication happened to be identical. In composition the accent of the perfect was shifted to the prefix, and *ē* consequently became *ī* (*dēdi* but *réddidi*).

It is to be noticed that though under the influence of assimilation we find *i*, *o*, *u* as the vowel of the reduplicated syllable, we never find *a*, as in every case where *a* is the root vowel, it has passed in the unaccented syllable to *e* or *i*, and in this case the *e* of the reduplication is unchanged.

In the case of *didici* (for *dé-dec-i*, from the root *dec*, *doc* in *doceo*) the *ē* in the unaccented syllable becomes, as regularly, *ī*; but the *i* of the reduplication may be due rather to the vowel in *disco* (for *di-dc-sco*) than to direct assimilation with the *i* of the perfect stem.

Bi-b-i seems to be for *be-b-i* (cf. *πέ-πω-κα*), as *sti-ti* (which is found) for *ste-ti* (Gell. 2. 14; Neue, ii. 460). The *i* of the reduplication may come from the compounded forms, where it would be unaccented (cf. *plico* for *pleco*, Greek *πλέκω*, from *implico*, etc. *M. U.* iv. 3, note); but it would be helped by the *i* of the present.

Loss of re-
duplication
in Latin.

It would seem from a comparison of Greek and Sanskrit that, except in those stems that began with a vowel, reduplication must once have been universal in the perfect-system. The reasons that caused it generally to disappear in Latin are doubtful, but the following theory has been hazarded.

We have seen that the dual and plural of the active and the whole of the middle voice of the perfect originally accented the termination and therefore took the reduced root. In those cases, however, where the root-syllable, though shortened, yet remained a distinct syllable, the reduplication was, in the dual and plural, one syllable further from the accent than in the singular and therefore lost its vowel. So we get in Sanskrit 1st sing. *ta-tákṣ-a*, 3rd plur. *takṣ-ús*, for *t-takṣ-ús*, and in Latin *fīdimus* for *f-fīd-i-mús*. From *fīdimus* is then formed a new singular *fīdi*, while on the other hand *ce-cid-i-mus* will be a new plural on the analogy of *ce-cid-i*. It is supposed that

traces of the original reduplication in such types survive in the double consonants of *re-ccidi*, *re-pperi*, *re-ce-cidimus* by loss of the reduplication giving *re-c-cidimus*. In cases like *ja-gm-ús* (3rd plur. act.), the reduplication was protected by the two following consonants and therefore remained. With this we may compare the Latin *fēcimus* for *fe-fe-imús*. Somewhat similar is the loss of the reduplication in the perfects of compound verbs which in the simple form are trisyllabic or in some persons quadrisyllabic, the prefix being originally accented. Thus we have *áttigi*, *óccurri*, *décidi*, *ócidi*, but *tétigi*, etc. (Z. G. d. P. 236). There are some exceptions, especially with the compounds of *curro* (Neue, ii. 466 sqq.).

The theory just given has however been attacked by Osthoff (M. U. iv. *Einleit.* p. viii; Z. G. d. P. 1, sqq.), largely on the ground of the Gothic 1st plur. *sētum* (✓*sed*), which cannot, by the phonetic laws of Gothic, be for *se-st-um*, *se-sd-um*. He prefers to start with two distinct but parallel forms of the 1st plur., a reduplicated form *se-sd-i-mús*, which will answer to the Sk. *sedimá*, and a form with a long root-vowel, *sēd-i-mus*, which gives the Gothic *sētum*. This latter form is of unexplained origin, but it may be remarked that the forms *vīdi*, *oīda*, *vēda* point to an original type of the perfect which was formed without reduplication (see also p. 459). The Latin *sedimus* phonetically may come from either the reduplicated or the non-reduplicated form, but Osthoff gives reasons (p. 105) for preferring to refer it to the latter. Similarly there may have been originally two forms, *be-bhoǵdh-a* (= *πέ-ποιθα*) and (*bh*)*bhoǵda* (= Goth. *baid*); in the former the reduplication perhaps bore the secondary accent, while in the latter it was unaccented. With *sēdimus* we may class *vēnimus*, *clēpimus*, from roots *vēn*, *clēp*.

In Greek, roots beginning with a vowel regularly form the perfect by means of the temporal augment, that is, of the syllabic augment which by a pre-historic contraction has coalesced with the initial vowel of the root. It is possible that traces of this may survive in Latin in the forms *ēgi*, *ēmi*, *ēdi*,

The Aug-
mented
Perfect.

co-ēpi. In every case it may be noticed that the perfect stem appears in Ablaut II, whereas we should rather have expected (p. 485) Ablaut I (*ē-ōg-i*). But on this point see p. 468.

Perfects
formed
with
internal
modifica-
tion.

We now come to those perfects which are formed by internal modifications of the verbal stem. But we may first briefly notice those internal modifications which accompany reduplication.

(i) Re-
duplicated
Perfects.

Roots of the *ē*-series originally showed *ō* in the singular of the perfect active. Thus we have *πέ-ποιθα* from $\sqrt{\pi\epsilon i\theta}$ (p. 485). Traces of this original Ablaut may be seen in Latin in—

mo-mord-i from an obsolete pres. **merdo* (cf. *σμερδ-νός*).

to-tond-i „ „ **tendo*.

spo-pondi „ „ **spendo* (*σπένδω*).

It is to be noticed that *spondeo*, *tondeo*, *mordeo* are derived forms, and therefore of secondary origin.

Again, *me-min-it*, *te-tin-it*, *di-dic-it* may possibly be for **mé-mon-it*, *té-ton-it*, *dé-doc-it*, from the roots *men-* (*men-s*), *ten-* (*ten-eo*), *dec-* (*dec-et*). So, too, *pe-pul-i* (for *pe-pol-i*, $\sqrt{pel-}$), (*ce-cul-i* (for *ce-col-i*, $\sqrt{cel}$), *te-tul-i* (for *te-tol-i*, $\sqrt{tel}$). But the last three are more than doubtful, and the vowel change there seems to be due merely to the common change of *el* to *ol* (*ul*) in Latin (p. 189).

(ii) Non-
redupli-
cated
Perfects.

The remaining cases of internal modification of the stem often present great difficulties. It will be well briefly to classify our material first, before discussing it in detail.

1. The three roots ending in long vowels, *dā-*, *stā-*, *dhē-*, preserve the original non-thematic forms in *de-dī-mus* (to give), *ste-tī-mus*, *de-dī-mus* (to place, in *ab-do*, etc.), which are for *de-dā-mos*, *ste-stā-mos*, *de-dhe-mos* (cf. p. 236).

2. Roots in *eḡ* have the strong stem in the perfect, e. g. *vīdi* (*ῥέδομαι*), *līqui* (*λεῖπω*). In the former there is no trace of an original reduplication (cf. *Fōīda*, *vēīda*), but to *līqui* correspond in Greek and Sanskrit the reduplicated forms *λέλοιπα*, *riréca*. Contrast *fīdi*, which we have seen (p. 456) was perhaps once reduplicated, and in which the root only appears with *ī*.

3. Roots in *ex* similarly have the strong stem without the reduplication (*fūgi* beside *φεύγω*, *fūdi* beside *χέλω*). On the other hand, roots that contain only *ū* have in the perfect *ū* with reduplication (*tu-tūd-i*, *pu-pūg-i*).

4. It has been thought that in *pependi*, *tetendi*, *poposci* (for *peporc-sc-i*) we have the reduced form of the root which is appropriate to the plural and has been extended to the singular. These forms would then stand for *pe-pnd-i*, *te-tyd-i*, *pe-prc-sc-i*; but there are so few certain instances of an Ablaut in inflexion in Latin that it is safer to suppose these to be formed straight from the present stem. *Cucurri* may possibly be for *ke-krr-i*, from a pres. *kerro* (= **querro*, *curro*; cf. *equiria* for *equi-quiria*).

5. The form *sēdimus*, from a root *sēd-*, we have already seen reason to believe to be primitive (p. 457), and with this we put *vēnimus*, *clēpimus*, from *√vēn*, *√clēp*.

6. Finally, we have the roots of which the presents contain *ā* (aorist presents). These form their perfects in three different ways—

(i) With the weak root reduplicated—in *pepigi*, *cecini*, *cecīdi*, *tetigi*, (v. p. 455).

(ii) With the strong root unreduplicated—*scābo*, *scābi*.

(iii) With a long *ē* in the stem—*capio*, *cēpi*.

With these last we may class the anomalous forms—*fōdio*, *fōdi*, *strīdo*, *strīdi*, *cūdo*, *cūdi*, *vinco*, *vīci*, *īco*, *īci*.

The perfects of the types *scābi*, *cēpi* present great difficulty. The most typical case is that of those verbs whose presents show *ā*, and whose perfects show *ē*. These are—

ēgi, from *āgo* (an aorist present). This we have already explained by contraction with the augment (p. 457).

frēgi, *pēgi*, from nasalised presents.

cēpi, *fēcī*, *jēcī*, *co-ēpi* (Lucr. 4. 619), from *yod*-presents.

Now, according to Osthoff's theory (p. 457), *vēnimus*, *clēpimus*, *sēdimus*, beside *vēnio*, *clēpo*, *sēleo*, represent a comparatively primitive Ablaut. Beside these we have *ēgi* from *āgo*, whose long vowel may be satisfactorily explained. Osthoff (*Z. G. d. P.* 155, 262) is of opinion that these four forms—all

words in constant use—with a short vowel in the present and a long vowel in the perfect, were the models on which all perfects with a long vowel corresponding to presents with a short vowel were formed. We may get other models in *vidi* (beside *vīdeo*), which seems primitive (p. 457).

We have therefore the Ablauts—*āgo* : *ēgi*—*vēnio* : *vēni*—*clēpo* : *clēpi*—*sēdeo* : *sēdi*—*līnquo* : *līqui*—*vīdeo* : *vīdi*. And these may have been sufficient to form the type on which were modelled—**ōdio* : *ōdi*—*cāveo* : *cāvi*—*fāveo* : *fāvi*—*scābo* : *scābi*—*lāvo* : *lāvi*—*pāveo* : *pāvi*—*fūveo* : *fōvi*—*fūgio* : *fūgi* (though this last may perhaps be an original Ablaut, see p. 459), etc.

The remaining perfects, *frēgi*, *pēgi*, *cēpi*, *fēcī*, *jēcī*, *co-ēpi*, which show a vowel differing in quality as well as quantity from that in the present stem, may be due to the analogy of *ago*, *egi*, but some of them at any rate admit of a different explanation (p. 456).

The
Perfect
in *-si*.

The last group of perfect-stems in Latin is formed by means of the addition to the root of (i) *-si* or (ii) *-vi*, *-ui*.

We will consider first the Perfect in *-si*, the usual form in roots ending with a guttural, labial, or dental, and occurring in some roots ending with *-s* or *-m* (*premo*, *sumo*, *tem-no*).

It is clear at first sight that the Latin perfect in *-si* closely resembles the Greek sigmatic aorist—that *deic-si*, e. g. is analogous to *ἐ-δεικ-σ-α*. But it is also clear that the person-endings in the two languages are very different.

The whole question has been treated of by Brugmann (*M. U.* iii. 16). His conclusion is, that the suffix *-s*, *-is* is characteristic of the aorist system, and has only got into the perfect by a confusion of the two tenses.

Thus in Greek, *ᾱδε(σ)α* is a sigmatic aorist corresponding to Sk. *āvedīṣam*. Its optative is *(F)εἰδε(σ)ῖην*, *(F)εἰδε(σ)ῖ-μεν*, the last form corresponding to Latin perf. subj. *viderīmus*. *Viderīmus*, which is also found, owes its short *i* to the future perfect. The singular of *viderīmus* should be *veidesiēm*, but the weak optative suffix has been extended throughout, as in *sīm* for and beside *siēm*.

The fut. exactum *videro* (for *veideso*) is in form an aor. subj., corresponding to the Gk. *ῥεῖδέ(σ)ω*, Sk. **véḷiṣā(-ṇi)* (Whitney, *Sk. Gr.* § 906). Then *videris*, *viderit* will be represented in Sanskrit by the corresponding forms *véḷiṣas*, *véḷiṣat*. In the plural the true forms are *vīderīmus*, *vīderīlis*, **vīderunt*. The two first correspond to Gk. aor. subjunctive of the type *φυλάξομεν*, with a short thematic vowel. *Vīderīmus* is found in this tense, but is due to the optative form (perf. subj.). Similarly *viderint*, the ordinary 3rd plur. fut. pf., is, properly, optative. The true form *viderunt* would correspond to Sk. *véḷiṣan* (*veides-o-nt*).

Accordingly, *videro*, *viderim* are, properly, aorists subj. and opt., and stand for *veideso*, *veidesim*.

The Latin 2nd plur. of the perf. ind. *vidis-tis* corresponds to Sk. *āvedīṣ-ṭa*, from 1st sing. *āvedīṣam*, and is therefore a sigmatic aorist. The 2nd sing. *vidis-ti* has apparently added to the stem of the sigmatic aorist the perfect termination *-ti*. The true aorist form would have been (*e*)*veid-is-s* (Sk. *āvedīṣ*). By a converse process *ῥεῖδε-ε* has taken the perfect termination, but remained aoristic in sense. The correct form would have been **ῥεῖδε-σ-τ*.

The 3rd plur. *vid-ēr-unt* is for *veid-es-nt*, but the termination is *-ont* rather than *-ent*, on the analogy of the thematic system, just as *sunt* (*s-nt*) is for **sent*, *ed-unt* (*ed-nt*) for **edent*, or as in Greek we get *εἶπ-ον* beside *εἶπ-αυ*. If *vidēre* is for *vid-er-e(nt)*, it may show the original vowel of the termination, but see p. 466.

Again as by the side of *ero* which is properly subjunctive (Gk. *ῥέ(σ)ω*, *ῥῶ*) there existed a future-perfect form *videro*, it was natural that *eram* should produce a form *videram*, and so *vidissem*, *vidisse* sprang up on the analogy of *essem*, *esse*. That the pluperf. indic. and subj. and perf. infin. are of comparatively recent origin, is indicated by the fact that they have no corresponding forms in the Italian dialects, which however possess forms analogous to the future perfect and perfect subjunctive.

In the case, then, of the root *vid-* we see throughout a con-

fusion between the sigmatic aorist and the perfect. Other instances of this confusion are plentiful. We may compare *deixi*: $\xi\delta\epsilon\iota\alpha$ —*pexi*: $\xi\pi\epsilon\alpha$ —*plexi*: $\xi\pi\lambda\epsilon\alpha$ —*lexi*: $\xi\lambda\epsilon\alpha$ —*mansi*, cf. $\xi\phi\eta\nu\alpha$ for $\xi\phi\alpha\nu$ - $\sigma\alpha$ —*clausi*, cf. $\xi\chi\epsilon(\delta)\sigma\alpha$, etc.

Similarly *dixō*, *dixim* are conjunctive and optative forms of the sigmatic aorist stem, and are not to be taken as syncopated for **dixiso*, **dixisim*. But from *dixim* was formed *dixem* on the analogy of *amāssem* (which is syncopated from *amavissem*) beside *amassim*.

Amasso and *amassim*, etc., are clearly also conjunctive and optative forms of the sigmatic aorist; but the double *-ss-* is, so far, unexplained, though it seems to find its parallel in Celtic. Whatever the origin of these words may be, they served as the type for *capesso*, *facezzo*, etc.

Dire (Plaut. *ap. Non.* 105. 23) is usually compared with $\delta\epsilon\iota\alpha\iota$, but $\delta\epsilon\iota\kappa$ - $\sigma\alpha\iota$ is not itself a distinctively aorist form, the σ belonging to the infinitive termination, and $-\sigma\alpha\iota$ corresponding to $-se$ ($-re$) in *es-se*, *da-re*, *fo-re*, *vive-re*. In Greek $\delta\epsilon\iota\alpha\iota$ only passes into the aorist system from the fact that it contains $-\sigma\alpha$. More strictly it is a non-thematic present infinitive. Cf. *traxe*, *scripse* (Aen. 5. 786, Auson. *Sap.* 1).

So far we have considered the addition of *-es-* or *-s-* to form the aorist stem as used indifferently. But the only true aorists in Greek in which the addition of *-es-* (as distinct from *-s-*) can be shown to be original are $\eta\delta$ - $\epsilon(\sigma)$ - α (for ϵ - $f\epsilon\iota\delta$ - $\epsilon\sigma$ - α) and η - $\epsilon(\sigma)$ - α (if this is rightly analysed as ϵ - $\epsilon\iota$ - $\epsilon\sigma$ - α). In Latin, corresponding to these we have *veid-es-* and *ei-is-* (in *ī-er-o*, *ī-is-ti*, with dissimilation of the vowels and shortening of the root-diphthong before the following vowel).

We may therefore put together—

<i>veides-</i>	$f\epsilon\iota\delta$ - $\epsilon\sigma$ -	Sk. <i>ved-i-s-</i> .
<i>ei-is-</i>	$\epsilon\iota$ - $\epsilon\sigma$ -	„ <i>ay-i-s-</i> .

These two, according to Brugmann, formed the model on which all other forms with the suffix *-es-* were made, e.g. *fu-er-o* (for an earlier **fu-s-o*, Umbrian *fu-s-t*, Greek $\xi\phi\nu$ - σ - α), *habu-er-o*, etc.

On these assumptions the following chronological statement of the history of the Latin perfect in *-si* has been given by Brugmann:—

FIRST PERIOD. *Perfect and Aorist forms distinct.*

In the *perfect*, the 2nd sing. added *-ti* immediately to the stem, the 2nd plur. added *-tis*, *visti*, *vistis* (cf. $\omicron\sigma\theta\alpha$, $\iota\sigma\tau\epsilon$). The perfect subj. must have existed in a form corresponding to the Oscan *fefacid*, Sk. opt. *riricyāt*, *varṛtyāt* (Whitney, § 812).

Aorist in -is-. *Videro*, *viderim*, *ab-iero*, *-ierim* (subj. and opt.), would be already in existence. The corresponding indicatives would be *(e)-vid-is-m*, *(e)-ci-is-m*.

Aorist in -s-. The 2nd plur. ending *-tis* was still added to the stem, as *deic-s-tis*. The type *amasso*, *amassim*, and a corresponding indicative (*amassm*?) already existed.

SECOND PERIOD. The distinction of meaning between the perfect and aorist begins to be lost, and the forms of the aorist in *-is-* penetrate to the perfect.

Forms of the type *vili*, *oīda*, *vēla*, take *-is-* permanently in the 2nd sing. and 2nd and 3rd plur., and thus instead of the original 2 sing. and plur. *vis-ti*, *vis-tis* (cf. $\omicron\sigma\theta\alpha$, $\iota\sigma\tau\epsilon$), we get *vidis-ti*, *vidis-tis*. So in the reduplicated perfect stems we get *tu-tud-is-ti*, *te-tond-is-ti*, etc. Forms like *videram*, *vidisse*, *vidissem* arise by the side of *videro*, on the analogy of *eram*, *esse*, *essem* beside *ero*; and then this type is extended to all verbs, and we get *fu-er-o*, *habu-is-se*, etc.

THIRD PERIOD. The forms of the aorist in *-s-* penetrate to the perfect system. *deic-s-tis* produces a singular *deic-s-ti* on the analogy of *vidisti* beside *vidistis*. Then *dixisti*, *dixero*, *dixissem* are produced on the analogy of *vidisti*, *videro*, *vidissem*, the stem being taken as *dix-*, not *dic-*; the forms *dixero*, *dixissem* remain by the side of *dixi*, *dixim*. But *amasso*, *amassim*, *fazo*, *faxim* never passed into the perfect system.

Dixisti (*deic-s-is-ti*) like *dixero* (*deic-s-is-o*) takes the signs both of the *-s-* and of the *-is-* aorist. We may compare for the doubling of the formative suffix the whole group of Sk.

aorists in -σις- and forms like *dic-ti-ta-re*, *τῆ-τα-το-s*, *βο-σκέ-σκο-ντο* (μ. 355)¹.

The long root vowel of some perfects in -si is difficult. Priscian, 9. 28, says, 'in -xi terminantia praeteritum perfectum II^{ndae} et III^{ae} et IV^{tae} conjugationis inveniuntur, et tunc tantum natura quoque producent paenultimam quando sit e, ut *rēgo*, *rēxi*.' It is supposed that the ē is due to the original non-sigmatic perfect (e. g. **rēgi*, parallel to *sēdi*), of which traces survive in *collēgimus* beside *intellexi* (Z. G. d. P. 113).

So *divīsimus*, *sūximus*, *gēssimus*, etc., which, if sigmatic aorists, at any rate owe their long vowel to the type *sēdi*, *vīdi*.

In some few cases we get true perfect forms preserved side by side with forms containing the aorist -s-. Thus *pupugi* and *punxi*, *pepigi* and *panxi*, *peperci* and *parsi*.

Osthoff (Z. G. d. P. p. 219) takes *dixem*, *dixi* to be syncopated forms, like *amassem*, *amasse*, by the side of the true aorists *dixō*, *dixim*, and holds that on the analogy of these last were formed *amasso*, *amassim*. Then from *amāso* : *amāre* would be formed *prohibēso*, *licēssit* (Neue, ii. 542) : *prohibēre*, *licēre*. Further *laccio* : *lacuit* (in *e-lacuit*) corresponds to *licesso* : *licuit*, and finally *lacio* : *laccio* corresponds to *facio*, *cipio* : *facezzo*, *capesso*.

Perfect
in -vi.

We will now proceed to consider the Latin *perfect* in -vi.

This is one of the most difficult questions in all Latin morphology. It has been exhaustively treated by Osthoff, Z. G. d. P. p. 251 sqq. His theory is briefly this:—

¹ The same doubling of a significant element appears in many different languages. We may compare—

plusieurs = pluriore.

mehrere = English mo-re, where mo is already a comparative.

nimmernmehr = nie mehr mehr.

gen. plur. uns-(e)r-er, eu-(e)r-er.

gegessen = ge-ge-essen.

ver-fressen = ver-ver-essen.

dédans = de de ante intus.

de devant = de de ab ante.

Vedic *vaçāsas* for *vaçās* (stem *vaçá*).

There are certain Latin perfects in *-vi* (*movi, vovi, cavi, favi, juvi, expavi, lavi*) where the *v* is not formative but an integral part of the verbal-stem. To these correspond past participles where the termination is preceded by a long vowel. On the analogy of this type the perfect in *-vi* was extended to all verbs where the participle was preceded by a long vowel; that is, because *fōvi, mōvi, jūvi*, etc., had participles *fōtus, mōtus, jūtus*, so from the participles *amātus, flētus, scītus, nōtus*, etc., were formed new perfects *amāvi, flēvi, scīvi, nōvi*, etc.

In the case of *cīvi, īvi, quīvi* the past participles are *cītus, ĭtus, quītus*, but the long vowel of the majority of the rest of the verbal forms caused the new perfects also to take a long vowel. The older perfects are seen in *-cīi, -īi, -quīi*, which are not to be considered as syncopated forms.

Pāvi is due to the old participle **pā-tus*, with a long vowel as in *pābulum*.

Again the similarity of *sē-men* to *nō-men, flā-men* produced the new perfect *sēvi* as parallel to *nōvi, flāvi*. Then in its turn the paradigm *consēvi, consitus* became a model for *oblēvi, oblītus*, and that again for **crīno, crēvi, *crītus*. When in the last case the present *cerno* was adopted from the compound forms *sēcerno*, etc., this in its turn became a model for *sperno, sprēvi*.

This theory is worked out by Osthoff with an ingenuity and wealth of illustration to which we cannot do justice here. The objection to it is that it presumes a regular gradation of analogical formations which it is hard to believe in.

A totally new theory has been since put forward by Schulze (*K. Z.* xxviii. 266), who explains the perfect in *-vi* by the amalgamation of the perf. part. with the forms of the substantive verb. He argues as follows:

In Latin the perf. part. neut. of a root *sē* would be represented by **sēves* (compare Greek εἶδ-*Fōs*, but the *e* is probably the original vowel of the neuter termination, cf. *πλεῖν* = *πλέειν* beside *πλέον*, *K. Z.* xxvi. 329). Similarly we should get a form **amāves*, etc.

h h

Now compounding this as a stable element with the various forms of the root *es* we get—

(i) *sèves-smos*, *sèves-slis*, *sèves-esām*, *sèves-essem*, *sèves-eso*. The last three, containing two consecutive syllables identical in form, will lose one (p. 220) and pass into—

(ii) *sèvesām*, *sévessēm*, *sévесо*.

Then the *e* in the unaccented syllable before a double consonant will pass into *i* (contrast *éssē*), and we shall have—

(iii) *sévimus*, *sévistis*, *séveram*, *sévissēm*, *sévесо*.

(For *sévismos* becoming *sévimus* v. p. 213 and *K. Z.* xxvii. 328.)

It is possible to explain on the same principle the 3rd plur., only we must suppose, as is not in itself improbable, that this form was from the first expressed without the copula, on the model of *hostes victi* for *hostes victi sunt*. For from a masc. nom. sing. *amavēs* we should get a dual *amavēs-e* and a plural *amavēs-es* (cf. *maiōs* : *maiūres*), which would become *amavēre*, **amavēres*. It is noticeable that Quintilian (1. 5. 42) says that some scholars considered *amavēre* as a dual¹. By the side of these there may have grown up an analogical form *amavērōnt* (for *amāvēsōnt*), on the model of *amāvīmus* (for *amāvēsmos*).

We should then get side by side—**amavērēs*, *amavēre*, *amavērōnt*. The language as developed combined these various forms, and took for 3rd plur. *amavēre*, **amavērōnt*, *amavērōnt*. The long *ē* tended to take the short termination, the short *ē* the long termination; cf. *stetēre* but *stetērunt*.

The sing. *amavi*, *amavisti*, *amavit* would then be by analogy, though the *-i* is still unexplained (p. 468).

According therefore to Schulze's theory the perfect in *-vi* is nothing but a *pis aller*, a periphrastic tense substituted for the regular perfect, which for some reason or other had ceased to exist. It is a periphrastic tense, however, in which the first element is stable, and unaffected by all relations of person

¹ Cf. Neue, ii. 391, who quotes the old authorities for this opinion. Havet (in *Arch. für lat. Lex.* iii. 558) sees a trace of the use as a dual in the didascalia to Terence, e. g. *fecere Q. Fabius Maximus P. Cornelius Africanus* in that of the Adelphi.

or number, such periphrastic tenses tending to become crystallised in some one form. Cf. C. Gracchus' *credo ego inimicos hoc dicturum esse*. (Neue, ii. 380.)

From the perfects in -vi cannot well be separated the forms in -ui. We may distinguish two sets of cases — The Perfect in -ui.

(i) Those in which the *u* belongs to the verb-stem.

(ii) Those in which the *u* is confined to the perfect.

(i) Root verbs like *ruo*, *nuo*, *pluit*, *luo* naturally make the perfects by the addition of the suffix -i, and so we get *rui*, *nui*, **plui*, *lui*, etc. On these are modelled the denominatives of the type *metuo*, *metui*, and also those verbs forming the present stem by the addition of the suffix -nu (fifth Sanskrit class), as *mi-nu-o*, *ster-nu-o* (cf. πᾶρ-νυ-μαι). The long vowel of the Old Latin *fūit*, *plūit* (Neue, ii. 497, 597) is on the analogy of *lēgo* : *lēgi*, *ēmo* : *ēmi*, etc.

(ii) In other cases -ui may be derived from older -vi.

The perfects of the type *genui* correspond always to a participle in -ītus (*genītus*, older **genetus*, cf. γενετή, *genetivus*, *genetrīx*). This participle would naturally correspond to a perfect **géně-vī*, which by the laws of Latin phonology would become **génō-vi* and *genui* (cf. *dēnuō* for **dénōvo*, *vīdua* for *vīdōva*, ἡ-φθ-ε-ος).

Again *dómītus* will represent an older *dómātos* (cf. ἀ-δάμα-ρος), whence was formed *domui* on the analogy of the type *genitus* : *genui*.

Then *domāre* : *domui* would be the model of *necare* : *necui* (though *enectus*), *secare* : *secui* (though *sectus*), also *monēre* : *monui*, of *docēre* : *docui* (though *doctus*), and *genēre* : *genui*, of *serere* : *serui* (though *exsertus*), *canēre* : *canui* (Neue, ii. 476) (though *cantus*), *velle* : *volui* (though there is no supine and the infin. is different). Further from *elicio*, *elicui*, *elicitus* we may get *rapio*, *rapui* (though *raptus*), and *sapio*, *sapui* (though no supine). Finally the *yod*-verbs with infinitives in -ēre may have influenced those with infinitives in -īre, and so we get *aperui*, *salui*, *amicui* (Z. G. d. P. 253 sq.).

Posui may have originated from an idea that the participle

was *pos-itus* not *po-situs*, whence *pos-ui* was formed as *dom-itus* from *dom-ui*. The truer perf. appears in *posivi*.

The In-
flexion of
the Perfect.

The great question in the inflexion of the perfect is the final *-ī* of the 1st sing. It is quite clear that this can have nothing to do with the *-ā* of the corresponding Greek and Sanskrit forms. It is however identified by Osthoff (*Z. G. d. P.* 191) with the Sanskrit *-é* of the perfect middle; so *tutudi* = Sanskrit *tutudé*, *scicidi* = *ci-ccid-é*, *dedi* = *dadé*, *steti* = *ta-sthé*, *reliqui* = *riricé*, *vidi* = *vividé*. There is no difficulty as far as meaning goes in the middle form; *sedī*, Sanskrit *sedé*, may be 'I have seated myself.' Compare the Greek *ἦμαι*, *ἦσται*, *πεφυγμένος*, etc.

But what is this original diphthong? The Slavonic languages show that it cannot be *ei*; it might be *oi* (cf. *is-ti* beside *roť*), but is more probably *-ai* (cf. Sanskrit *-se*, *-te* = Greek *-σαι*, *-ται*). That *ai* in an unaccented syllable may become in Latin *ī* is proved by *quaero: cónquiro*; *ménsais* = *ménsis* (cf. Osc. *diumpais*) *sī*, Osc. *svae*; *hum-ī*, *χαμ-αί*, etc.

The original paradigm from the *√vid-* would seem to have been—

1st sing.	<i>veida</i>	2nd sing.	<i>voista</i>	3rd sing.	<i>voide</i> .
Plur.	<i>vīdmus</i>		<i>vistis</i> .		
Middle	<i>vīdai</i>		<i>vissai</i> .		

We have already seen that in *ē*-stems the characteristic vowel of the perf. sing. is *ō* (p. 419). But it is possible that *ē* always appeared in the 1st person, for Vedic Sanskrit here always shows *ā* in an open syllable (*cakāra*, *jagāma*), whereas the representative of European *ō* in an open syllable is *ā* (De Sauss. p. 72; *Z. G. d. P.* 61). If this is so, we should have primitive I.-E. *veida*, *voista*. The *ō* is extended in Greek (*οἶδα*, *οἶσθα*), the *ē* in Latin (*veida*, *veista*); *-ta* in *veis-ta* stands for *-tha* after the sibilant.

The middle 2nd pers. *vissai* became *vis-tai* on the analogy of the active, and then *-di-* was inserted on the analogy of *vi-di*, *vi-di-mus*, etc., and we get *vi-di-sti* (cf. *ἀπάρσι* for **ἀπασι* on analogy of *ἀπρ-ός*). In this way the *s* of *vidisti*, *vidistis*

came to be considered as belonging to the termination, though really part of the stem (but see p. 461).

The 3rd sing. seems to have originally ended in *-ēt* (cf. *fuēt*, *dedēt*, Neue, ii. 442), perhaps on the analogy of *siēt*, *ponebāt*, etc. The *i* of the classical 3rd pers. would come from 1st sing.

The other forms have been considered above.

On the fut. and impf. in *-b-* there is nothing to be said. The future in *-b-* has a corresponding form in Celtic, and forms a strong argument for closely connecting the Italian and Celtic families. The imperf. in *-b-* is a unique formation, peculiar to the Latin language. The Future and Imperfect in *b*.

The traditional explanation is that the *-b-* is a relic of the $\sqrt{bh\check{s}}$, and that *arē-bo* = *āre-bhūō*, where *arē* may conceivably be an infinitive form, such as is supposed to survive in Lucretius, *facit arē* (6. 962). But this is not satisfactory, even if we go on to connect *-bam* of impf. for *bhūām* with *ἐ-φύη-ν*. Nothing approaching to a solution has yet been discovered.

We may now go on to discuss the theory of the Latin moods, so far as they have not been dealt with already.

The only conjunctive of the non-thematic system surviving in Latin is the form *ero* for **eso*, beside the Greek $\epsilon(\sigma)\omega$ ω , The Conjunctive. Sanskrit *as-ā-(ni)*. Of this we have spoken above (p. 447).

In the thematic conjugation the characteristic vowel of the present subjunctive is *ā*. Thus in Indo-European we should have an indic. *bhér-e-ti*, a conj. *bhér-ā-ti*, to which last corresponds Latin *ferāt*. It may be noticed that the Ablaut $\check{o}$, $\check{e}$ (indic.) : *ā* (conj.) is identical with that of *ekyo-*, *ekye-* (masc.) : *ekyā-* (fem.). (*M. U.* ii. 124.)

In the aor. subj. on the other hand the thematic vowel is $\check{o}$, $\check{e}$, which is kept in *videro*, etc., the subj. of the sigmatic aorist ; cf. Greek *φυλάσσομεν*, etc. (v. p. 461).

The mood-sign of the optative of non-thematic verbs is in the singular *-iē-*, in the plural, where the accent rests on the person-ending, *-ī-* (*K. Z.* xxiv. 303). In thematic verbs the mood-sign is *-i-*. The Optative.

Thus the primitive inflexion of the optative of the root *es-* was—

Sing.	<i>s-iē-m</i>	<i>s-iē-s</i>	<i>s-iē-t.</i>
Greek	<i>ἐ(σ)-λη-ν</i>	<i>ἐ(σ)-λη-s</i>	<i>ἐ(σ)-λη-(τ).</i>
Latin	<i>s-iē-m</i>	<i>s-iē-s</i>	<i>s-iē-t.</i>
Sanskrit	<i>s-yā-m</i>	<i>s-yā-s</i>	<i>s-yā-t.</i>
Plur.	<i>s-i-mós</i>	<i>s-i-té</i>	<i>s-i-nt.</i>
Greek	<i>ἐ(σ)-ι-μεν</i>	<i>ἐ(σ)-ι-τε</i>	<i>ἐ(σ)-ι-(εν).</i>
Latin	<i>s-i-mus</i>	<i>s-i-tis</i>	<i>s-i-nt.</i>

The weak form has been universalised in the classical Latin *sīm, sīs, sīt (sīt)*.

Precisely similar are *vel-i-m, nol-i-m, māl-i-m, ed-i-m, du-i-m* (cf. *do-i-μεν*).

Forms like *dēmus, stēmus, ferēmus* (which though used as a future is clearly similar to the other two) are doubtful. It is not easy to see how *demus, stemus* can have originated from **dā-i-mus, *stā-i-mus* (*δοῖμεν, σταῖμεν*). In *ferēmus* it is possible we may go back to a form *fer-o-ī-mus* (cf. *φέρ-ο-ι-μεν*), where for *oi* passing into *ē* we may compare *plourumē* (Inscr.) for *plurimi, plurimoi*. But here *oi* is final, and in the same word we have a medial *oi* which does not become *e*.

On the whole no explanation yet given can be considered satisfactory. But the fact that Cato uses *ferem, audiem* seems to show that the *e* is at any rate not due to the final *ā* of the stem of the 1st conjugation. The Oscan termination of pres. conj. of 1st conjugation is *-aiem, -ait, -aid* (Neue, ii. 443).

Forms like *faxim, viderim* have been given above.

The 'imperfect subjunctives' of non-thematic verbs, *dārem, fōrem, stārem*, seem to have been originally formed from the stem of the sigmatic aorist, on the analogy of *s-iē-m*, to which they owe their *ē*, which in this case has been extended to the plural (*darēmus* for *dā-s-ē-mus*). We should expect a long vowel in the singular, a short vowel in the plural, and this seems to be indicated by the varying quantity of *dārem* and *stārem*, of which the latter represents the singular, the former the plural form of the root.

We may now pass on to the system of the Imperative.

The Imperative.

All imperatives in Latin, with the single exception of *memento* (*me-mnē-tóōl*), are formed from the present stem. We have therefore nothing answering to the aor. imper. of Greek.

The ordinary 2nd sing. imperative of thematic verbs consists simply of the theme with *-ē* as the thematic vowel. Thus *reg-e*, *amā* (*ama-i-e*), etc. The long vowels of *stā*, *dā*, *ī*, may be on the analogy of the imperatives of the thematic system. *Nolī* may possibly owe its *ī* to the conjunctive (optative) form *noīm*.

On the other forms of the imperative we may refer to what has been said on p. 433. If what is there remarked is correct, we must allow free play to analogy in the various persons, numbers, and tenses of this mood. *Vehunto* will be formed from *vehito* on the analogy of *vehunt* beside *vehit*, and *vehitote* on the analogy of *vehite* (injunctive in origin), beside *vehē*.

The forms *stamino*, *famino* will not then (as Corssen thought) be singulars of *famini*, etc., standing for **faminos*, but be new formations on the analogy of *stato*, etc., just as the new Greek middle imperatives *φέρεσθω*, *φέρεσθε*, *φέρεσθων* are formed simply on the analogy of the actives *φέρετε*, *φέρετω*, *φερόντων*.

The 2nd sing. of the passive imperative is identical with the present infinitive active. It has been thought to be in origin identical with the Greek middle forms, and *seque* has been compared to *ἔπου* (*ἔπεςο*). The difficulty in this case is the final *-ē* in Latin, which can hardly represent an original *-ō*. We may draw attention to the similar case in Greek, where the 1st aor. infin. act. and imperative middle are identical in form, though not in accent.

The 2nd plur. imper., as has been remarked above, is nothing but a participial form, used apparently as an exclamation (*λεγόμενοι*, *legimini*). The 3rd sing. and plur. are simply the corresponding active forms with the addition of the passive suffix *-r*. But that this was not always a necessary

addition is proved by the forms *nitito*, *censento* quoted p. 434. (*M. U.* i. 163; iii. 1; *K. Z.* xxvii. 172.)

The Infinitive.

The termination of the infinitive is clearly *-se*, which after vowels becomes of course *-re*. So we get *es-se*, *vel-le* (for *vel-se*, as *collum* for **col-sum*), *fer-re*, *dū-re*, *age-re*, etc. Paul. *Fest.* 68. 13 preserves the *-s-* between vowels in *dasi* for *dari*.

The final *-e* of the infinitive in Latin is perhaps sometimes long (though most of the instances have been altered by the editors), and the corresponding form in Greek shows the diphthong *-ai*. It is probable therefore that here as elsewhere we get a confusion between the functions of the dative and the locative, so that *viverē* will be a dative corresponding to Sk. *jīvasé* (I.-E. *gigē-sai*), *viverē*, a locative, standing for *vive-sē*, with the final *-i* becoming *-ē*, as in *marē* for **marī*. The same confusion may possibly be seen in Greek, where we have *δόμην-ai* (dative) and *δόμην* (said to be for *δόμην-ι*, locative) (cf. p. 438).

It would seem that the infinitive passive is absolutely identical with the corresponding active form with *ē*: *monerē* and *monerī* are only different ways of writing the same word; and we find *fiere* (insc. *fierei*) beside *feri* (Neue, ii. 334). Eventually one form was in practice appropriated to the active, the other to the middle, but no difference can be supposed to exist in the origin of the two forms. And indeed in itself the infinitive is neither active nor passive, its meaning in any given passage being determined by the context. It is equally possible to say *θαῦμα ἰδεῖν* and *θαῦμα ἰδέσθαι*.

It would seem, however, that some infinitives ended originally not in *-se* but in *-e*. In Latin we get *calē-facio*, *madē-facio*, which seem to be equivalent to *calēre facio*, etc.; and the Lucretian *facit arē* (6. 964) is made much more intelligible if we can suppose *arē* to be an old infinitive. Now in the Veda we get forms like *áje* (Whitney, *Sk. Gr.* § 970 a), which correspond to a Latin **agē* or *agī*. We should then get a distinction drawn similar to that between *monere* and *monerī*, so that *age-re* would be used actively, *agi* passively.

The passive infinitive in *-ier* has never yet been satisfactorily

explained, but it may possibly be the ordinary infinitive in *i* with the addition of the suffix *-ere* of the thematic verbs. Thus *laudari-er(e)* would take the infinitive suffix twice over, and thus be parallel to forms like *dic-s-is-ti*, etc., quoted on p. 463. The final *-e* might easily be lost, as it is in the nom. sing. of neuter stems in *al(i)-*, *ar(i)-* (e.g. *calcar* and *calcare*). It is possible that the form was invented as an expedient to distinguish between the active and passive significations of the infinitive, before *laudare* and *laudari* were differentiated. When this latter distinction was established, the form in *-ier* became obsolete.

The participles do not present any special difficulty in Latin. The Participles.

In the present participle active the termination in its threefold Ablaut is *-ont-*, *-ent-*, *-nt-*, the last two coalescing in Latin. The weaker form has universally prevailed, as the strong form in Greek, except in *e-untis* (*ei-ont-is*), *flex-unt-es*, *sontem*, *insontem*.

Of the perfect participle active no certain instance exists (but cf. p. 465), for we can hardly venture to see such a form in *papāver* (*pa-pa-ues*), *cadā-ver*.

The future participle is a form peculiar to Latin, but clearly formed from the strong stem of the *nomina agentis* in *-tor*; cf. *dātōr* beside *dā-tū-rus*.

The present participle passive is only preserved as the form of the 2nd plural of the passive voice, but the termination is the same as appears in the triple Ablaut *-mon-*, *-mēn-*, (*mn*) *-mŋ-*, *ali-mōnium*, *ali-mentum* (*mŋ*), *alu-mn-us*, and numerous other nominal forms (v. p. 300; *M. U.* ii. 185, sqq.).

The past participle in *-tōs* is universally used for the passive participle and supine. Originally it carried the accent as in Greek, and was added to the weak stem, as in *dā-tus*, *stā-tus* (*stāre*), *rā-tus* (*rē-ri*), etc. But in the vast majority of cases the strong stem has penetrated to this form; *tentus* would seem to be for *tpētús* (cf. *rarós*), but in *occultus* the *ul* (*ol*) may be

due not to an Ablaut but to the regular change of *el* to *ol* before every consonant but *l*.

For the apparent alternation with *-sô-s* v. p. 209.

Mortuus is of course not a participle, strictly speaking, but an adjective, and answers to the Sk. *mṛtvá*.

The Gerundive, or *Participium Necessitatis*, as it has been called, is formed, as shown above (p. 216), by the addition of the suffix *-no* to the stem of the pres. part. active. Thus *amandus* is for *amant-no-s*, and the suffix is the same as we get in the Sanskrit participles in *-ná* (Whitney, § 957) and in the Greek adjectives *σεμ-νός*, *ἀγ-νός*, etc.

APPENDIX I.

ON THE TWO DEGREES OF THE REDUCED ROOT.

THE theory of the two degrees of the reduced root was first worked out by Osthoff (*M. U.* iv. 1 sqq.), who shows, by an exhaustive collection of instances, that the semivowels *i*, *u* vary in quantity throughout all the Indo-European languages so universally that it is impossible to believe that the variation does not represent an original difference. That this difference is due to the presence or absence of the secondary accent is a mere hypothesis, but the difference between strong and reduced roots being recognised as due to a difference of accentuation, we are introducing no new hypothesis in connecting the difference between two degrees of the reduced root with a variation in accentuation. A variation of quantity such as we find in *excītus* by the side of *excitus* cannot be due to mere accident, and in supposing the difference to be due to a difference of accentuation we are only imagining the operation of a cause which is known to be operative elsewhere. The consonantal form of the long semivowels is obtained from a consideration of the Sanskrit. There we find from a root *prai-* *pri-ta* by the side of *priy-ā* (I.-E. *pri-*), and by the side of *bhrús* (Gk. *δ-φρús*) a genitive *bhruv-ās* (Gk. *δ-φρúf-os*, I.-E. *bhruy-ós*), etc.

The liquid and nasal sonants we have already seen to be treated in other cases exactly like the semivowels *i*, *u*, and we are therefore justified in supposing that they too once appeared in a different form under the secondary accent to that which they take when entirely unaccented; and this supposition is borne out by the very different representations of these sounds in the derived languages. To *i*, *u* will correspond *ī*, *ū*, *ȳ*, *ȳ* before consonants; to *i*, *u* will correspond *jr*, *ll*, *ȳm*, *ȳn* before sonants.

For instance—

gm- is seen in Sk. *ga-tá*, Gk. *βαρός*, Lat. *ven-tus*,
I.-E. *gm-tós*, O. H. G. *kun-f-t*.

gmm- in Sk. *gám-anti*, O. H. G. *kom-an*.

gñ in Sk. *á-gā-t*, Gk. *ἑ-βᾶ-τε*.

Similarly *stḡ-* appears in *σπα-τός*.

strr- in Sk. *tī-stir-ḑ*.

stḡ- in Gk. *σπατός*, Lat. *strā-tus*.

Notice that in Sanskrit *ṣr*, *ḷ* are represented by *ṣr*, *ḷr*, but *ṣ̄*, *ḹ* by *ṣr̄*, *ḷr̄*.

But for a fuller account of the representation of the various forms in the different languages see p. 234.

Osthoff has worked out the theory of the two forms of the reduced Ablaut as far as regards semivowels in *M. U.* iv. 280, 353.

(i) Indo-European *ī*, *ū* originated from *eī*, *oī*, *aī*, *eu*, *ou*, *au*, *iē*, *io*, *iu*, *ue*, *uo*, *uu* occurring before consonants in unaccented syllables, the vowel of the combination being assimilated to the semivowel.

Thus *ueīdtos* became *uiīdtos* and then *ūīdtós*.

kleutós *kluytós* *klūtós*.

(ii) *ī*, *ū*, so produced, remained long when bearing the secondary accent, but when, owing to their position in the sentence or by composition, they ceased to bear this accent, they sank to *ī*, *ū*. Hence *klūtós* and *klūtós* are both possible forms, but the first occurred only at the beginning of a sentence or clause or immediately after an unaccented syllable.

Thus *ueīkétai kleutós* became *ūīketi klūtós* (where *˘* represents the secondary accent).

But so *kleutós* became *só klūtós* or *sò klūtós*; so *enklūtós* (*inclūtus*), *pérīklūtós* (*περίκλυτος*).

(iii) To *ī*, *ū* before consonants correspond *i̯*, *u̯* before vowels, the same assimilation taking place; but the two sounds are not contracted to *ī*, *ū*, because owing to the following vowel the second element necessarily remains consonantal. These forms occur under the secondary accent.

(iv) To *ī*, *ū* before consonants correspond *i̯*, *u̯* before vowels. These forms originate from *i̯i̯*, *u̯u̯*, as *ī*, *ū* from *ī*, *ū*, only here the element lost is sonant. They would occur in unaccented syllables.

Thus with the original doublets $d\tilde{u}h\acute{o}$, $d\tilde{u}ó$ and $s\tilde{u}h$, su we get—

Ablaut III. $\delta\acute{u}f-o$, $\delta u\acute{f}\acute{o}\delta e\kappa a$, duo , Sk. $duv\acute{a}$, $duv\acute{a}da\varsigma a$.

Ablaut IV. $\delta f\acute{o}\delta e\kappa a$, $\delta f\acute{o}i\acute{o}s$, dis ($d\tilde{u}is$), Sk. $dv\acute{a}$, $dv\acute{a}da\varsigma a$, Germ. $zw-ei$, Engl. $tw-o$.

Ablaut III. $\acute{u}ós$, $suós$ (for $su\acute{f}ós$).

Ablaut IV. $sf-i\acute{a}los$, A.-S. $sv-in$, Lat. $su-inus$.

APPENDIX II.

VOWEL-GRADATION IN NOMINAL AND VERBAL FORMATIONS.

IT will hardly have escaped observation in the list of Ablauts given in the pages of Chap. X that the degree in which any root, in any instance, appears is connected with the particular suffixes by which the root is followed. Thus we have $\delta\chi os$, $\acute{t}\acute{o}kos$, $\psi\acute{o}gos$, $\acute{l}\acute{o}gos$, $\acute{n}\acute{o}mos$, etc., formed from the roots $\acute{e}\chi$, $\acute{t}\acute{e}\kappa$, $\psi\acute{e}\gamma$, etc., appearing with the masculine suffix $-os$ and the first Ablaut. On the other hand with the neuter suffix $-os$ we have the second Ablaut, as in $\acute{z}\acute{e}pos$, $\acute{l}\acute{é}\chi os$, $\acute{m}\acute{é}nos$, $\acute{g}\acute{é}nos$, $\beta\acute{é}los$, $\acute{t}\acute{é}i\chi os$.

The following tables show the various Ablauts under which a root appears in verbs and nouns in Greek and Latin, according to the nature of the formative suffix. In every case it is to be noticed that a variation in Ablaut is accompanied by a variation in accentuation. Theoretically we must suppose that in the original language the stronger form of the root (Ablauts I and II) only appeared where the accent was on the root, the weaker forms (Ablauts III, IV) only where the accent was on the suffix. But as a matter of fact we find that in many cases the original accent has been superseded in Greek by a secondary accent, and of the original accent no trace is left.

The lists are taken from De Saussure, p. 228, etc., and Bloomfield in the *American Journal of Philology*, i. 314.

A. Nominal Formations.

(1) *Themes in -o (masc.), -ā (fem.).*

(a) Oxytone forms with strong root (Ablaut I).

Adjectives— $\theta\acute{o}ós$, $\lambda\acute{o}i\phi\acute{o}s$, $\tau\acute{o}m\acute{o}s$, $\acute{o}\lambda\acute{k}\acute{o}s$ (de Sauss., p. 79).

Nomina agentis— $\kappa\lambda\acute{o}\phi\acute{o}s$, $\tau\rho\acute{o}\phi\acute{o}s$, $\pi\acute{o}m\phi\acute{o}s$, $\acute{e}i\acute{o}\delta\acute{o}s$.

Names of concrete objects and abstract nouns—*λοπός*, *νομός*, *λοιγός*.

But paroxytone or otherwise accented are—*πόκος*, *τόκος*, *ζόφος*, *νόμος*, (*πεινηκόντορος*, v. p. 273), *στοίχος*, *λόγος*, *φόνος*, *στόλος*, etc.

Forms from the long-vowel series variously accented—*μῶκος* (*μεμηκός*), *πτωχός* (*√πτάκ*, *πτήσσω*), *θύωκος* (*θαάσσω*), *ὤμός* (cf. *ām-atius*?), *ψῶχος* (*ψήχω*, *ψᾱκτήρ*), *ὥκός* (cf. *ācer*?, *ἀκ-ωκ-ή*), cf. *ἀγ-ωγ-ός*.

The relation of *ὄνος*, *ὠνή* to *vēnum* is not clear (De Sauss. p. 155).

We must specially notice here the difference between the dissyllabic *nomina agentis* which are oxytone (*φορός*) and the corresponding passive forms, which are paroxytone (*φόρος*). The question is discussed in the chapter on accentuation (p. 274).

In Latin we find a few traces of this formation, in *mod-us* (*μέδω*), *pro-cus* (*precor*), *reg-us* (*rego*), *log-a* (*τέγω*), Old Latin (*s*)*lonum* (cf. *στίνος*, *στένω*). The ablative *pondo* (beside *prendo*) points to an old neuter **pondum*.

(b) Oxytone forms with reduced root (Ablaut III)—*ταρσός* (*τερσ-*), *στραβός* (*στρεφ-*), *ἀγός* (cf. *ἀγωγός*), *ζυγόν*, etc.

With a shifting of the accent on to the root—*στίβος*, *στίχος*, *τύκος*, etc.

This form is specially common in compounds—*δύσ-χιμ-ος*, *νεο-γν-ός*, *δί-φρ-ος*, *ἀ-τραπ-ός*, *ἔπι-πλ-α* (*πέλλα*, *pellis*), *ζα-βρ-ός* (*βορά*), cf. *ρνι-νι-γν-us*, *αβι-ε-γν-us*, etc.

Exceptional forms with the middle root (Ablaut II) are *λευκ-ός*, *Δελφοί*, *φειδός*, *ἔργον* (cf. *ὄργανον*).

The feminines formed by suffix *-ā* are of three types:—

(i) Oxytone, Ablaut I—*δοχή*, *στολή*, *σπονδή*, *σπουδή*, etc.; with long vowel *κυματ-ωγ-ή*, *λωβή* (*lūbes*), paroxytone *κώπη* (*cūpio*).

(ii) Paroxytone, Ablaut II—*εἰλη*, *ἔρση*, *εἴρη*, *ἐρείκη*, *λεῦκη*, *πέδη*, *σκέπη*, *στέγη*, *χλεύη*, etc.

(iii) Oxytone, Ablaut III—*βαφή*, *γραφή*, *κοπή*, *ταφή*, *φυγή*, *ὀμοκλή*, *ἐπιβλαί* (Hesych.), *ράφή*. With shifting of accent—*βλάβη*, *δίκη*, *λύπη*, *μίχη*, *σάγη*, *μεσό-δμη*, etc.

(2) *Themes in -mo, -mā.*

(a) Strong root (Ablaut I), accent doubtful—*οἶμος*, *ὄλμος*, *ὄρμος*, *κορμός*, *λοιμός* (*√slei*), *τόλμη*, *πότμος*, *ὄρμή*, *πλοχμός*.

The root of *λοιμός* is *slei* or *srei*, in *ἀ-(σ)λοι-τός*, *ἀ-λι-τεῖν*, *ἀ-λίθιος*, *ἀ-λεί-της*.

With amplified terminations we have *γόν-ι-μος*, *μόρσιμος*, *τρώφιμος*,

φθόριμος, σπόριμος, πλόκαμος, οὐλαμός ($\sqrt{\text{fel-}}$), ποταμός ($\sqrt{\text{pet-}}$ in πίπτω), κοι-μά-ομαι ($\sqrt{\text{kei-}}$).

With a long vowel—ῥωχμός ($\sqrt{\text{rgh-}}$), βωμός, ψωμός, θωμός.

In Latin we have *forma* (*fer-o*), *formus* (but *θερμός*).

Irregular are—ἀγερμός, κεῦθμος, δειμός.

(b) Reduced root, oxytone—ἀκμή, πυγμή, στιγμή, ἐρυνμός (τιμή?), λιχμάω.

(3) *Themes in -ro, -rā.*

(a) Strong root, varying accent—χώρα, ψώρα, σφοδρός (beside σφεδανός), ὠχρός (beside ἀχλὺς). Cf. φοβ-ε-ρός, τρομ-ε-ρός, πλοκερός.

(b) Reduced root, oxytone — πικρός, λιβρός, ψυδρός, λυγρός ($\sqrt{\text{leugh-}}$), σαπρός, μακρός (μάκιστος), λάθρα, ἐρυθρός. Cf. τακερός, παγερός, ἄκρος (accent misplaced).

Of special Greek formation are the oxytone stems in -ad, with a strong root—δρομάς, ὀλκάς, νομάς, σποράς, Στροφάδες, δορκάς, etc.; but the reduced root appears in φυγάς, νιφάς, μιγάς.

(4) *Themes in -to, -ta.*

(i) Paroxytone (feminines oxytone) with strong root—οἶτος (εἶ-μι), κοῖτος, νόστος, κόντος (κέντρον), χόρτος (cf. *hortus*, εὐ-χερ-ής), βρον-τή, ἀορτή (ἀείρω).

(ii) Oxytone, reduced root (past participles)—δαρτός, καρτός, πάμφθαρτος, φατός, τατός, βατός, δοτός, ποτός, στρατός, etc.

So σπάρτον beside σπείρα.

In Latin we can hardly be sure of an Ablaut in these cases. *Perculsus, pulsus, volsus* may owe their form to the special laws governing -el- in Latin; *tentus, ventus*, etc., may represent *τηντις*, etc., but may also contain the middle Ablaut of the pres. stem. So *com-mentus*: αὐτό-ματος. But we get the reduced root in *stātus*, *dātus*, *rātus*, *cātus*, *sātus*, *fīteor*, *nātare*.

In roots containing *e* between two consonants, and not containing a semivowel, the reduced form cannot exist; so we get *ἐκτός*, *λεκτός*, *πεπτός*, etc.

Forms like *φευκτός*, *ἄδεκτος*, *πᾶκτός*, *ἄωτος* (ἄημι), take the middle root, on the analogy of the other forms; so too *δεικτέον*, *ἄζεукτος*, etc.

(5) *Themes in -no, -na.*

(a) Paroxytone, strong root—ῥοφή ($\sqrt{\text{ereph}}$), θρόνος (for *θόρνος, cf. θόρναξ), $\sqrt{\text{ther-}}$ in *θελυμνον*, *ἀθερίζειν* (Curt. *G. E.* p. 257, etc.), *ποινή*, oxytone, is an exception.

οῖνος, *ὑπνος*, *ἔκνος* are doubtful; **vīnum*, if not borrowed, must go

back to **veinum*; *som-nus*, *sopor* are for *σμενος*, *σμεpor*; *δκος* (δ-κν-ος) has been connected with *cun-c-la-ri*.

τέχνη, φέρνη, ξέδνα are exceptions. So σεμ-νός.

(b) Oxytone, reduced root—σπαρνός; but especially seen in Indian participles in -νά.

τέκνον is shown by Germ. *beg-ná* to have been originally oxytone; but as it cannot lose its vowel, it may be regular, except in accent.

There is no Ablaut in the Latin *signum* (seq-), *tignum*, *lignum*, *rēg-num*, *dig-nus* (✓dek).

(6) *Themes in -so*. Strong root—τόξον, κορσός, λοξός (cf. *luxus* λικριφίς, but λέχρις). Cf. *noxā* (*neco*), and perhaps δόξα (cf. *δοκέω*, *doceo*, *dec-et*).

(7) *Themes in -en*. Oxytone with reduced root—φρ-ήν, πολύ-φρ-ην, ἄρσ-ην (Sk. *vr̥gan*, with misplaced accent).

But λειχ-ήν, πειθ-ήν with middle root and τερ-ήν paroxytone.

(8) *Themes in -ano, -ani, -oni* take the strong or middle root—έδανός, σφεδανός, στεγανός, σκέπανον, δρέπανον, λείψανον, σφενδόνη, βελόνη, ἀμπεχόνη. Cf. the type τέμενος. But also ὄργανον, ζόφανον, πόπανον, χόφανος, ὄρφανός, οὐρανός, ὀρκάνη, ῥοδανός.

(9) *Themes in -on*. Oxytone with reduced root, as κύων, which was originally oxytone. Cf. Sk. *cnán*.

But many show the middle root—εἰκών, σκάπων, μάκων, ἀηδών, ἀρηγών.

(10) *Themes in -men*. Oxytone, reduced root, ἀντμήν, λιμήν, πυθμήν, ὑμήν.

Here we may put the neuter words with suffix -μα (-τη), which are paroxytone with middle root—βλέμμα, θρέμμα, πείσμα (πενθ-μα), σέλλα, σπέρμα, φθέγμα, δείμα, χείμα, ζεύγμα, ρεύμα, etc.

Often there is a corresponding form in -μος with the strong root—e.g. φλογμός beside φλέγμα.

οἶμα will be on the analogy of οἶμος. δῶμα, σῶμα are obscure.

Latin has *seg-men*, *ger(b)-men*, *teg-men*, *lu(c)-men*, *ter-men*. In *culmen*, for **celmen*, *el* becomes *ul* regularly.

With a long vowel we have βᾶμα, σᾶμα, σύσταμα, λῆμμα, δῆγμα, δρᾶμα, πῆγμα, πῶμα (also πόμα)—in Latin *stāmen*, *grāmen*, *lāmīna*, *effāmen*, *sufflāmen*.

(11) *Themes in -mon*. Middle root; accentuation irregular—κειθμών, λειμών, χειμών, πλεύμων, τέρμων, στόμων, τλάμων, ἀνείμων. Cf.

τερ-ά-μων, τελ-α-μών—φλεγ-μονή, βέλ-ε-μν-ον. In Latin we have *ser-mo*, *ter-mo*, *tē-mo*, (**tec-mo*).

(12) *Themes in -er*. Oxytone, weak root—*ἄ-ν-ήρ* (cf. *N-er-o*), αἰθήρ (*ἄ-ήρ*), σπινθήρ.

(13) *Themes in -ter*.

(a) Oxytone, reduced root—*ἄ-σ-τήρ* (cf. *stella*=*s-ter-la*), πα-τήρ, θυγάτηρ (?).

(b) *Nomina agentis*, oxytone, middle root—*θελκτήρ*, *θρεπτήρ*, *στρεπτήρ*, *ξευκτήρ*, *πειστήρ*, *γεγετήρ*, *ψεύστειρα*.

With these we may put the forms in *-της* which are paroxytone, with middle root—*νεφεληγερέτης*, *ἐρέτης*, *κλέπτης*, *ψεύστης*, *αὐθ-έν-της*, *Θερσίτης*, *πεύστης*.

Also the neuters in *-τρον*—*λέκτρον*, *κέντρον*, *φάρτρον*, *θρέπτρον*, *τέρετρον*, etc.

But the whole group is difficult. Originally there seem to have existed two groups of *nomina agentis* in Greek, in *-τήρ* and *-τωρ* (De Sauss. p. 212), the former oxytone, the latter paroxytone. The first of these was early confused with the names of relationship in *-τήρ* like *πατήρ*. With the oxytone termination *-τήρ* we should expect the reduced root, which in fact we get in *δοτήρ* beside *δώτωρ*. On the other hand there is a great group of oxytone forms with middle roots like *θελκτήρ*.

Further we find a variation of the accentuation of such words in Sanskrit according to the part they play in the sentence; and the old word of relationship *mātār* is oxytone, but with a middle root, while the corresponding *bhrātār* (*φράτηρ*) is paroxytone, and this is proved in both cases to have been the original accent by the German *modér* beside *bróþor*.

In Latin again we mostly find the termination *-tor*, but with the middle root—(*vector*, *lector*, *sector*, *emptor*, *genitor*), but also *dātor*, *stātor* (*stātor*), *pāter* but *māter*, *frāter*; while *soror* (*σῆξορ*), Sk. *svásar* has the termination *-or* (De Sauss. p. 230).

On the whole question, which can partly be explained by the Ablaut of inflexion, see p. 297.

(14) *Themes in -or*.

(a) Oxytone, weak root—*ἄ-ορ* (*ἡσ-ορ*, *ἐν-ῖς* ?), Sk. *dv-ār-as* (nom. plur.), of which the strong form appears in *för-es* (Brugm. *Stud.* ix. 395).

(b) Paroxytone, middle root—*σῆξορ*, Sk. *svásar*, Lat. *soror*, Gk.

ἵορες· προσήκοντες, συγγενείς (for σφεσ-ορ-). The *η* appears in εὐρέσφι· γυναιξίν (Hesych.).

(15) *Themes in -i.*

These mostly take the strong root and are paroxytone—στρόφις, τρόχis, μόμφis, χρόμis, τρόφις, δρόμis, μόλπις, φρόνis. Cf. φόρμι-γξ. In Latin we have *exlortis*.

But in Sk. *así*, Latin *ensis*, we seem to have the reduced root *ηs-i*. (Cf. *ἄορ*=*ηs-ορ*.)

(16) *Themes in -ti of the weak inflexion* (see p. 291).

The root is reduced, but the accent in Greek is invariably paroxytone, and in Sk. and German only sometimes oxytone. Still it is thought that this last is the primitive accent.

στάσις, κάρσις, τάσις, ἀνδροκτα-σί-η, βάσις, φάτις, χάτις, δόσις, πόσις, Latin *for-tis* (*fer-ox*), *sor-(ti)-s* (*prae-ser-ti-m*), *stātio*, *rat̄io*, *affāt̄im*.

But θέσις, δέσις, ἔφεισις (where the vowel cannot fall), ἄμ-πω-τις, δῶ-τις, φεῦξις (also φύξις), πεῦσις (also πύστις).

In compounds we have ἐγερσι-μάχης, θελξι-νοος, etc.

(17) *Themes in -eu of the weak inflexion.*

(a) Oxytone, reduced root—βραδύς (*mr̄dús*), παχύς (cf. *pinguis*), πλατύς (*pr̄thús*), ελαχύς (*levis*, *raghús*), δασύς (*den-sus*), βαθύς (*bénthos*), ταχύς, γλυκύς (cf. γλεῦκος), θρασύς, βραχύς (*brevis*), κρατύς, ταρφύς, βαρύς (*gravis*), πολύς (*purús*=*pr̄rú-s*) τανύ-πτερος (*tenuis*).

Notice that this form only occurs in stems containing a liquid or a nasal.

(b) Paroxytone, strong root—κρόκυσ, κόρθυς, *domus* (δέμω).

Compare the neuters γόνυ (*genu*), δόρυ (δέρω).

(18) *Themes in -eu of the strong inflexion*—Oxytone, reduced root (?)—Ζεύς (*Dī-ēú-s*), βούς (*gō-ēú-s*), νᾶς (*nū-ēú-s*).

But these being monosyllabic, the Ablaut of the stem will vary according to the case; v. p. 328.

Of special Greek formation are the oxytone stems in -eu with a strong root—στροφεύς, δρομεύς, τοκεύς, τομεύς, νομεύς, φονεύς, φορεύς, κλοπεύς, γονεύς. στιβεύς, however, has a weak root.

(19) *Themes in -t(e)u.*

(a) Oxytone, reduced root—*por-tu-s* and the corresponding subst. of the 4th declension formed from the past participle.

(b) Paroxytone, strong root—*oi-sú-a*.

(20) *Themes in -es* (Greek and Latin nom. sing. is in -os) are formed with the middle root, paroxytone.

Substantives—γένος, ἔπος, νέφος, ἦτος, ἔδος, μέρος, θίρος, κέρδος, βλέπος, ἔλκος, ζεύγος, τεῖχος, εἶδος, κλέος, etc.

In Latin *genus, nemus, ulcus* (for *uelcos*), *jūger-um, decus, tempus, holus* (cf. *helusa*, so that *-ol-* is from original *-el-*), *scelus*; cf. *gloria* (for **cleues-ia*), perhaps *Venus*, and compare *vetus*; *pondus, foedus* exceptionally show Ablaut I (De Sauss. p. 79).

Adjectives—*εὐμενής, ἀσπερχές, εὐγενής, ἀτενής, Ἑπειολής*. To these correspond in Latin the adjectives in *-er* from an original *-ēs*, which have taken the *r* of the oblique cases. Cf. *degener*: *εὐγενής*. The *-s* is however kept in the nom. in *Cerēs, pubēs, impiubēs*.

(21) *Themes in -os* (second series).

These are words of the type Sk. *uśās, bhīyās*, Gk. *ῥώς, ψευδής*. Brugmann (*K. Z.* xxiv. 14) has shown these to be originally neuters, which have reverted to the masc. or fem. declensions. The new declension is of the type *αὐσώς*, acc. *αὐσόσα*, voc. *αὔσος* or *αὔσε*, loc. *αὐσέσι*, gen. *αὐσεσός*, Sanskrit *uśās, uśāsam, uśāsi, uśāsas*.

(22) *Themes in -ios, -uos* (*K. Z.* xxiv. 54, 69, 98).

The suffix *-ios* added to the root of an adj. in the middle degree gives the comparative in Sk. (Whitney, *Sk. Gr.* § 463), the addition of *-ta* to this suffix in its reduced form gives the superl. (Whitney, § 467), but the root vowel is not weakened in the superlative.

Thus we have

Positive (<i>urú</i>)	Compar. <i>vár-īyas</i>	Superl. <i>vár-iṣ-īha</i> .
(<i>kṣiprā</i>)	<i>kṣép-īyas</i>	<i>kṣép-iṣ-īha</i> .

So in Greek from the root *φερ-*, we get *φέρ-ισ-τος*, from *κερδ-κέρδ-ισ-τος* with middle roots; in comparatives *μεί-ων* (*μῖ-νύ-ς*), *κρείσσων* (*κρατύς*), *ὀλείζων* (*ὀλῆγος*), *θάσσον* (*ταχύς*), *μείζων*, *μᾶσσον* (*μᾶκρός*), *μᾶλλον* (*μᾶλα*), cf. *μάκιστος*. (*K. Z.* xxiii. 126.) The same cause may explain *ē* in the much disputed *πρῆϊος*.

The suffix *-uos* is seen in the perfect participle active and in some adjectives (De Sauss. pp. 71, 155).

The perf. participle is regularly formed with the weak root of the verb and is oxytone. Cf. Sk. *ca-kr-ván*, where *-n* is secondary. So in Greek we get *ιδ-νία, ἀννεχυῖαν* (*ἐνήνοχα*, the *ε* cannot fall out altogether), *συνελεχώς* (*εἰλοχα*). This weak Ablaut is regularly preserved in the feminines in Homer. Cf. *λελαῦκνία, μεμᾶκνία, τεθᾶλνία, ἀρῆρνία, σεσᾶρνία* (*σεσᾶρως*); *κεκᾶφῶς* (*κέκηφε*). In the masculine, however, the strong Ablaut is generally preserved.

We have in the perf. part. a double Ablaut of stem and suffix, e. g.

masc. *μείδ-υος*, fem. *μείδ-υς-ῖ-α*. The masc. nom. regularly has the suffix vowel long and this is extended to the oblique cases in the Homeric *τε-ρπύ-ων-ας*, *βε-βα-ων-α*.

(23) *Themes in -om*. Oxytone, weak root—*χθ-ών* (Sk. *kṣ-am*), *χιών* (*hiems*, Sk. *hī-m-ā*).

(24) *Themes in -nt*.

The suffix is accented and has no vowel, the root is weak. The type of this class is *s-nt* (*K. Z.* xxiii. 579).

(25) *Root themes*.

(a) Weak roots appearing in all cases, and independently of the inflexion. When they terminate in a semivowel (*i, u, r, l, m, n*) the theme in declension is increased by *-t*. Such themes are *ἀλκ-ί*, **Α-φιδ-*, *σύ-ζυγ-*, *ἀντηριδ-*, *ἐπηλίδ-*, *ju-dic-*, etc. (De Sauss. p. 202.)

(b) Themes in which the weak root appears only in the weak cases of the inflexion.

As a type we may take Sk. *vṛtra-han*, acc. *vṛtra-hán-am*, dat. *vṛtra-ghn-é*, which would correspond to a Greek type *Βελλερο-φών* (where the accent is unexplained), gen. *-φάτος*. This last form does not appear, the word having been assimilated to the stems in *-οντ-*, but we see the weak root in *Περόφαιττα* (De Sauss. p. 27).

B. The Ablaut in Verbal Formations and Inflexion.

I. Forms with Ablaut II.

(1) In the case of non-thematic presents (Hindoo second or *ad*-class), where the present stem is identical with the root, the accent in the singular of the active rested on the root, which therefore took the strong degree (Ablaut II). In the plural and dual of the active and the whole of the middle voice the accent rested on the termination, and the root was consequently reduced.

Thus	<i>εἶ-μι</i>	<i>εἶ-ς</i>	<i>εἶσι</i>	<i>ἴμεν</i>	<i>ἴτε</i>	<i>ἴ-ασι</i> .
Sk.	<i>é-mi</i>	<i>é-ḡi</i>	<i>é-ti</i>	<i>i-más</i>	<i>i-thá</i>	<i>y-ánti</i> .
So	<i>ἔσ-μι</i> (<i>εἰμί</i>)	<i>ἔσ-σι</i>	<i>ἔσ-τι</i>			(σ)-έντι (Dor.)
Sk.	<i>ás-mi</i>	<i>á-ḡi</i>	<i>ás-ti</i>	<i>s-más</i>	<i>s-thá</i>	<i>s-ánti</i> .
	(e)-sum	e(s)-s	es-t	s-u-mus	(estis)	s-unt.

And from *√ēd* *ed-s* (*ēs*) *ed-t* (*est*); cf. *ἔδ-μενα*.

In the long vowel series we get—

<i>τί-θη-μι</i>	<i>θίδωμι</i>	<i>ἰσᾱ́μι</i>	beside <i>τίθεμεν</i>	<i>δίδωμεν</i>	<i>ἰσᾱ́μεν</i> .
<i>φᾱ́-μι</i>	(<i>φῆς</i>)	<i>φᾱ́-σι</i>	<i>φᾱ́-μέν</i>	<i>φᾱ́-τε</i> .	

κείται is irregular as containing a strong root in the middle voice, but the same irregularity appears in Sanskrit *çéte* (Whitney, *Sk. Gr.* § 629).

στεύται (Γ. 83) and *σεύται*, or rather *σοῦται* (Soph. *Trach.* 654), seem to be contracted forms of a thematic verb (Curt. *Verb.* i. 154).

(2) Thematic presents, active and middle, of the Hindoo first or *bhū*-class, in the active and middle have Ablaut II, e.g. :—

<i>ἔχω</i>	<i>φέρω</i>	<i>δέρκομαι</i>	<i>φεύγω</i>	<i>λήθω</i>	<i>τήκω</i>	<i>ἥδομαι</i>
<i>leyo</i>	<i>rego</i>	<i>tremo</i>	<i>dūco</i>	<i>clēpo</i>	<i>uro</i>	(* <i>euso</i>) <i>dico</i> .

Full lists in Curt. *Verb.* i. 210 sq.

(3) Verbs of the *Yod*-class (Hindoo fourth or *dīv*-class) take properly Ablaut III, e.g. *βαίνω* for *gmīð*, but in Greek many are found with Ablaut II, e.g. *πίσσω* (*περῖω*), *χέφω*, *τέλλω*, *φθείρω*, *στέλλω*, *κτείνω*, etc.

(4) The future system has Ablaut II throughout, *ἔσομαι*, *κείσομαι*, *στέλω*, *δερῶ*, *πλεύσομαι*, *λείψω*, etc.

(5) The sigmatic aor. active and middle has Ablaut II, *ἔλεξα*, *ἔδειξα*, *ἔρρευσα*, *ἔφθειρα* (for **εφθερσα*), etc.

(6) The weak aor. pass. is a formation peculiar to Greek and is made with Ablaut II. On the other hand the strong aor. shows Ablaut III.

Compare *ἐκέρθην* *ἐκάρην*, *ἐζεύχθην* *ἐζύγην*, *ἐκλέφθην* *ἐκλάπην*, *ἐστρέφθην* *ἐστράφην*, *ἐθρέφθην* *ἐτράφην*, *ἐτήχθην* *ἐτάκην*. Exceptions to this rule are *ἐτύχθην*, *ἐμίχθην*, *ἐκρίθην*, *ἐστάθην*, *ἐσύθην*, *ἐχύθην*, as well as *ἐβλήθην*, *ἐτμήθην*, etc.

Forms like *ἐτράφθην* *ἐστράφθην* in Doric are the result of dialectical peculiarities.

II. Forms with Ablaut I.

(1) In the original language the singular of the perfect active was accented on the root, the dual and plural and the whole middle voice on the termination. The singular active accordingly took a strong Ablaut and preferred Ablaut I, the other forms took the reduced root.

Traces of this original Ablaut are to be seen in *ἔοικα*, *ἔικτον*—*οἶδα*, *ἴδμεν*—*μέμονα*, *μέμαμεν*—*γίγονα*, *γέγαμεν*—*λέληθα* (for **λελωθα*?) *λέλᾳσται*, etc.

In practice, however, the strong form prevailed all through the active, though many instances of the weak form predominating are

also found, especially with perfects in -κα, ἔφθαρκα, κέκαρκα, ἔσταλκα, ἀλήλιφα, etc.

Ō (ō) seems the characteristic vowel of the perfect, but though o in Greek is fairly common (see list in Curt. *Verb.* ii. 188), ω is rare (ἔρρωγα, etc.), and ου only found in ἐδήλουθα.

But traces of ω in a verb that elsewhere has η (e) are seen in ἀφέωκα, ἀνέωνται, quoted as perfects of ἔημι. (Cf. ἀφέωνται, found in the New Testament.)

In Latin we have *momordi*, *telondi*, *spreondi*, from old presents **merdo*, **tendo*, **sprendo*.

(2) Derived verbs in -eo take Ablaut I.

ὀχέω, πορέω, φονέω, φορέω, τρομέω, τροφέω, ὀρχέομαι : cf. βε-βόλη-μαι, με-μόρη-ται, ἀπεκτόνηκα, δομή-τωρ, σπορητός.

In Latin we have *doceo* (√*dec*), *noneo*, *noceo*, *tondeo*, *spondeo*.

C. Forms with Ablaut III.

(1) For the non-thematic pres. system v. supra. We may add ἰ-οίην, ἰ-όντος, (σ)-όντος (*s-ontis*), (σ)-ετ-έος, φᾶ-ίην, φᾶ-ναι, φᾶ-μενος, etc.

(2) For plural, etc., of perf. system v. supra.

(3) Reduplicated thematic presents (Hindoo third or *hū*-class) take the weakest form of the root.

τίκτω for τι-τκ-ω, γί-γν-ομαι (cf. *gigno*), (σ)ἰ-σχ-ω, πί-πτ-ω, μί-μν-ω, ἱζω (for σι-σδ-ω), σῖδο (*si-sd-o*), *disco* (*di-dc-sco*), etc.

(4) Inchoative forms add -σκω immediately to the weakest root. βᾶ-σκω (*βη-*), πᾶσχω (*πη-*), μίσγω (*μιγ-σκω*), ἱσχω (*fik-σκω*), φᾶσχω, λᾶσχω (*λακ-σκω*), χᾶσχω (*χη-σκω*); cf. *posco* (*phc-sco*), *disco*, *misceo* (*mig-sceo*), etc.

(5) Comparatively few presents in ιω are formed from the weakest root in Greek, though this is historically the correct form; but we find καίνω, μαίνομαι, φαίνω, πταίρω, βάλλω, βαίνω, πᾶλλω, τιταίνω.

The Sanskrit *hṛṣyati*, *tṛṣyati* seem to show that *horreo* (for **horseo*), *torreo* (for **torseo*, cf. *to(τ)s-tus*) belong to this group rather than to the forms in -eo.

(6) Sanskrit verbs of the 5th and 8th classes (formed by adding -nu or -u to the stem) have this Ablaut, e.g. *su-nu-* from √*su*, *tanu* (*ty-nu*) from √*tan*. But these two types are originally identical. The 8th class (which adds -u) is, with one exception

only, formed from roots ending in *-n* (Whitney, *Sk. Gr.* § 603, iv. b), and *tanōmi* goes back to *tn-nō-mi*, just as *sunōmi* to *su-nō-mi* (*K. Z.* xxiv. 288).

In Greek we have *πάρ-νυ-μαι*, *τά-νυ-ται* (*τή-νυ-ται*), *ἄγ-νυ-μι*, *μῆγ-νυ-μι*, *ἄ-νυ-ται* (cf. *αὐθ-έν-της*), and passing into the thematic class *ἀ-νύ-ω*, *τα-νύ-ω*. But *δείκ-νυμι*, *ζεύγνυμι* have strong roots.

With other nasal formations, but the same weak degree of the root, *ικ-άν-ω*, *ἀμαρτ-άνω*, *δαρθ-άνω*, *α-ὕξ-άνω* (cf. *ἀ-φέξ-ω*), etc.

With a double nasal (Hindoo 7th or *rudh*-class) we have *θι-γ-γ-άνω*, *λι-μ-π-άνω*, *τυ-γ-χ-άνω*, *πυ-ν-θ-άνομαι*, *λα-γ-χ-άνω*, *χα-ν-θ-άνω*, *λα-μ-β-άνω*, *ἀ-ν-θ-άνω*, *μα-ν-θ-άνω*, *λα-ν-θ-άνω*.

With a nasal followed by *ῖ*, *ἐρύθ-αίνω*, *μαρ-αίνω*, *ἀλιτ-αίνω*, *α-ὕ-αίνω* (*√εῖσ-*, *ῖσ-* in *ῡρο* = **euso*), *τε-τρ-αίνω*.

In Latin *fi-n-do*, *sci-n-do*, *fi-n-go*, *ru-m-πο*, *tu-n-do*, *li-n-quo*, *ju-n-go*. But in Latin we only have the inserted nasal, not the nasal suffix.

(7) The non-thematic strong aorist is properly an imperfect from a non-thematic present, *ἐ-πτά-μην* being related to a possible **πτά-μαι* as *ιστά-μην* is to *ιστά-μαι*. Accordingly, in agreement with the general theory of such forms, we get a strong root in the singular indic. of the active, a weak root in the other numbers and moods of the active and throughout the middle (De Sauss. pp. 21, 128, 146).

Thus we find in Greek *ἐπτ-άμην* beside *ἑπτη-ν*, *βᾶ-ίη-ν* beside *ἕβη-ν*, *ἐτλᾶν*, *τλᾷην* beside *ἐτλην*, as well as *ἐ-χῦ-μην*, *ἔ-σσύ-το*, *κλύ-μενος*, *ἀπο-ύρ-ας* (beside *ἀπό-φερ-σε*), *ἔκτᾶ-το*, *ἀπέφᾶ-το*, etc.

But in the singular of the active we have *ἔ-χευ-α*, *ἔσσευ-α*, cf. *ἤλευ-ά-μην*. The *-α* of the first person represents an original *η*, and the old inflexion was of the type **ἔ-χευ-η*, **ἔ-χευ-ς*, **ἔ-χευ-τ*, **ἔ-χυν-μεν*. In later times however, owing to the final *-α*, they have been assimilated to the type of the sigmatic aorist, and the strong form has become predominant in all numbers and voices.

(8) The thematic strong aor. is an imperfect from a thematic pres., which had the accent on the thematic vowel (Whitney, *Sk. Gr.* §§ 751, 846). As the accent comes after the root, the root is consequently reduced; but the original accent is only preserved in Greek in the infinitive and participle.

Thus we have *ἔ-σχη-ον*, *ἔ-σπιν-ον* (beside *ἔπω*, *ἱn-sec-e*), *ἔκλυν-ον*, *ἔπταρ-ον*, *ἀγρ-όμενος*, *ἔ-πιθ-ον*, *ἐπνυθ-όμεν*, *ἔ-δραμ-ον*, *ἔ-λαθ-ον*, *ἔ-λακ-ον*,

διετμάγ-ον. Reduplicated forms, *ἤνεγκον* (*ἦ-νε-γκ-ον*), *ἔειπον* (*ἐ-φε-ψ-ον*), *ἐκε-κλ-ό-μην*, *ἔ-πε-φν-ον*, *λε-λάθ-ό-μην*.

Irregular are *ἀγερέσθαι* (beside *ἀγρόμενος*), *ᾠφελον* (beside *ᾠφλον*).

(9) The strong aor. pass. takes Ablaut III, *ἐρρύ-ην*, *ἐ-σσύ-ην*, *ἐ-μίγ-ην*, *ἐ-τάκ-ην*, *ἐ-σάπ-ην*.

Irregular are *ἐφλέγην*, *ἐπλέκην* (also *ἐπλάκην*), *ἐτέρσην*.

(10) It has been already explained that the perfect system takes a strong Ablaut in the sing. indic. act., a weak Ablaut elsewhere. The following is a list of the known instances:—

Weak forms.	Strong forms.
<i>ἔ-ικ-τον</i> , <i>ἐ-ίκ-την</i> , <i>ἔ-ικ-το</i> , <i>ἦ-ικ-το</i>	<i>ἔ-οικ-α</i> .
<i>ἐ-πέ-πιθ-μεν</i>	<i>πέ-ποιθ-α</i> .
<i>ἴσ-τον</i> , <i>ἴθ-μεν</i> , <i>ἴσ-τε</i>	<i>οἴδ-α</i> .
<i>δει-δι-μεν</i> , <i>ἐ-δε-δί-την</i> , <i>δε-δι-ώς</i>	<i>δέ-δοι-κα</i> .
<i>ἐλ-ηλύθ-αμεν</i>	<i>εἰλ-ήλουθ-α</i> .
<i>γέ-γα-μεν</i> , <i>γε-γα-ώς</i>	<i>γέ-γον-α</i> .
<i>μέ-μα-μεν</i> , <i>με-μα-ώς</i>	<i>μέ-μον-α</i> .
<i>πέ-πασ-θε</i> ¹ , <i>πε-παθ-νῖα</i>	<i>πέ-πονθ-α</i> .
<i>τε-τλά-μεν</i> , <i>τε-τλά-ίην</i>	<i>τέ-τλη-κα</i> .
<i>κέ-κρᾶχ-θι</i>	<i>κέ-κρᾶγ-α</i> .
<i>ἔ-στᾶ-τον</i> , <i>ἔ-σᾶ-μεν</i>	<i>ἔ-στη-κα</i> .
<i>δε-δᾶ-νῖα</i>	<i>δέ-δη-ε</i> .
<i>με-μᾶκ-νῖα</i>	<i>με-μηκ-ώς</i> .
<i>τε-θαλ-νῖα</i>	<i>τέ-θηλ-α</i> .
<i>λε-λάκ-νῖα</i>	<i>λέ-ληκ-α</i> .
<i>σε-σᾶρ-νῖα</i>	<i>σε-σηρ-ώς</i> .
<i>ᾀρ-ᾀρ-νῖα</i>	<i>ᾀρ-ηρ-ώς</i> .

The middle forms are more common, *εἶμαι* (*Fe-fσ-μαι* beside *φέσ-σα*), *κέ-κλιμ-αι*, *ἔ-σσύ-μαι*, *κέ-χῦ-μαι*, *εἴ-μαρ-ται*, *ἔμβραται* (for *ἐ-σμη-ται*), *ἔ-φθαρ-μαι*, *ἔ-σπαρ-μαι*, *δέ-δαρ-μαι*, *κέ-καρ-μαι*, *πέ-παρ-μαι*, *τέ-ταλ-μαι*, *ἔ-σταλ-μαι*, *τέ-τα-μαι*, *πέ-φα-ται*, *ἀλ-ήλιμ-μαι*, *ἐρ-ήριγ-μαι*, *ἐρ-ήριμ-μαι*, *μέ-μιγ-μαι*, *τέ-τυγ-μαι*, *πέ-φυγ-μαι*, *πέ-πυσ-μαι*, *ἔ-στραμ-μαι*, *τέ-τραμ-μαι*, *τέ-θραμ-μαι*, *λέ-λῶσ-μαι*, *πέ-πο-ται*, *πέ-φαν-ται*.

In some roots the reduced Ablaut cannot or does not in any form appear, as in *ἔ-ξεσ-μαι*, *λέ-λεγ-μαι*, *ἐν-ήνεγ-μαι*, and on the analogy of these are modelled the new forms *βέ-βρεγ-μαι*, *κέ-κλεμ-μαι*, *πέ-φλεγ-μαι*, *ἔ-ζευγ-μαι*, *δέ-δειγ-μαι*, *λέ-λειμ-μαι*, etc., with strong instead of reduced roots.

¹ Written *πέποσθε* in many texts of Homer; cf. Monro, *H. G.* § 225.

I.

INDEX OF GREEK WORDS.

(The references are to pages. The Appendices are not included.)

- | | | |
|---|---|---|
| <p>ἀβέλιον 167.
 ἄβιν 61, 153.
 ἄβληρα 167.
 ἄβρός 141.
 ἀγάσθε 393.
 ἀγαγεῖν 418.
 ἀγάλακτος 175.
 ἀγάλαξ 175.
 ἀγαμαι 393, 395.
 Ἀγάμεμνον 271.
 ἀγάομαι 395.
 ἀγαπάω 411.
 ἀγαπάω 411.
 ἀγαπρίς 102.
 ἀγανός 138, 149.
 ἀγγελέω 431.
 ἀγγέλλω 411.
 ἀγγεῶν 429.
 ἀγείρω 102, 135.
 ἀγέληφι 320, 323.
 ἀγέομαι 63, 232, 306.
 ἀγέροντο 244.
 ἀγήραος 180.
 ἀγῆρι 378.
 Ἀγησίλαος 173.
 ἀγῆται 179.
 ἄγιος 293, 440.
 ἀγινέω 417.
 ἀγκαθεν 365.
 ἀγκάλοι 75.
 ἀγκάς 365.
 ἀγκύλαι 75.
 ἀγκύλος 61, 275.
 ἀγκών 61, 125, 257.
 ἀγρόν 138.
 ἀγρός 440.
 ἀγνύασι 399, 401.
 ἀγνυμι 168, 401.
 ἀγνῦσι 401.
 ἀγνυτον 401.
 ἀγνωτος 275.
 ἀγνοια 112.
 ἀγον 385.</p> | <p>ἀγορά 135, 244.
 ἀγοράσδειν 195.
 ἀγορή 64.
 ἀγροικός 266.
 ἀγρόμενος 244.
 ἀγρός, 33, 60, 71, 246, 294.
 ἀγρώστης 60.
 ἀγυια 266, 312.
 ἀγυιά 266.
 ἀγχι 143.
 ἀγχω 61, 143, 145, 405.
 ἀγω 60, 138, 231, 246, 306, 405.
 ἀγωνίδαται 112, 383.
 ἀγωνοθέτης 304.
 ἀδάμας 147.
 ἀδάματος 70.
 ἀδεής 421.
 ἀδελφός 137, 172, 175.
 ἀδευκής 148.
 ἀδελκοί 425.
 ἄδην 164.
 ἀδικήμενος 404.
 Ἀδμητος 147.
 ἀδνόν 138.
 ἀδύς 63, 147, 164, 292.
 ἄδω 408.
 ἀέθλον 149, 180, 251.
 Αἴθρη 82.
 αἰέ 28, 308.
 αἰῖδρ 167.
 αἰίρω 408.
 αἰεσι 396.
 ἀεκαζομένη 305.
 ἀέκων 180.
 αἰέντα 66.
 ἀέξω 169.
 ἀεσα 168, 407.
 Αἰσχροῦντας 82.
 αἰτός 28.
 αἴζομαι 195.
 αἴζυξ 291.</p> | <p>αἴζωστος 266.
 ἀηδών 335.
 ἀήμενοι 238, 410.
 ἀημι 248, 396, 410.
 ἀῆναι 439.
 ἀησι 238.
 ἀήσυλος 275.
 ἀήτης 238.
 ἀητο 238.
 ἀητον 238.
 ἀθάνατος 175, 384.
 Ἀθανεῖος 82.
 ἀθάρα 149.
 ἀθεεῖ 318.
 Ἀθήνησι 323.
 ἀθήρ 149.
 ἀθροίζω 175.
 ἀθρούς 175.
 αἰ 79, 82.
 Αἶαντι 83, 324.
 αἶβητος 167.
 αἰγίβοτος 243.
 Αἰγυπτίη 96.
 αἰδεσθῆναι 308.
 αἰδετο 406.
 αἰδόμενος 406.
 Ἀἶδος 167.
 αἰδω 81.
 αἰδῶ 182.
 αἰδώς 308, 350.
 αἰεῖ 298, 308, 331.
 αἰέν 332.
 αἰές 308.
 αἰετός 406.
 αἰητον 238.
 αἰθε 79, 82.
 αἰθει 246.
 αἰθήρ 246.
 αἰθόμενος 406.
 αἰθουσα 306.
 αἶθος 309.
 αἰθηρ 246.
 αἰθω 79, 149.</p> |
|---|---|---|

αἶκνον 197.
 αἱματοσταγής 303.
 αἰμύλος 275.
 αἶνεον 386.
 αἰνέω 411.
 αἰνίζομαι 411.
 αἰνῶθεν 359.
 αἰνός 135.
 αἰπόλος 127, 130.
 αἶριον 386.
 αἶρω 408.
 αἶσα 79.
 αἰσθάνομαι 83, 416.
 Αἰσκληπιός 71.
 αἰσσω 194, 408.
 αἰσυμνότης 76.
 αἰσχίων 365.
 αἰσχρολόγος 276.
 αἶτεον 386.
 αἶτημα 376.
 αἰτίασθαι 180.
 αἴτιος 194.
 αἰχμή 197.
 αἰῶ 299, 308, 331.
 αἰών 79, 97.
 ἀκαρον 61, 124, 140.
 ἀκαχμένος 418.
 ἀκήκοα 182, 418.
 ἀκηχέδαται 112, 411.
 ἀκλεᾶ 181.
 ἀκμή 293.
 ἀκμώτεον 304.
 ἀκμων 133, 330.
 ἀκοίτης 175.
 ἀκοίτις 175, 325.
 ἀκύλουθος 175, 245.
 ἀκύνη 331.
 ἀκούσας 81.
 ἀκούσας 81.
 ἀκύνω 127, 170.
 ἀκροᾶ 382.
 ἀκροᾶσθαι 197.
 ἀκρος 60.
 ἀκρίς 294.
 ἀκρός 61.
 ἀκων 331.
 Ἀλαλία 220.
 ἀλαλκε 407.
 ἀλαλκεῖν 61.
 ἀλαστος 240.
 ἀλγεινός 402.
 ἀλγος 199.
 ἀλέα 169.
 ἀλείτης 245.
 ἀλειφα 302.
 ἀλειφαρ 150.
 ἀλείφω 196.
 ἀλεξήσω 397.
 ἀλέξω 125.

ἄλεται 431.
 ἀλήθεια 64.
 ἀληθής 308.
 ἀληλιμμένος 421.
 ἀληται 432. -
 ἄλθω 405.
 Ἀλιθέρσης 364.
 ἄλιος 180.
 Ἀλις 63, 169.
 ἀλίσκομαι 415.
 ἀλιτεῖν 245.
 ἀλιτήμενος 404, 409, 410.
 ἀλκή 61, 125.
 ἀλκυών 62.
 ἀλκυών 62, 173.
 ἀλλαχοῦ 367.
 ἀλληκτος 238.
 ἀλλήλων 183.
 ἀλλοδαπός 357.
 ἀλλοιρ 161.
 ἄλλοκα 74.
 ἄλλομαι 62, 164, 408.
 ἄλλος 61, 91.
 ἄλλοτα 74.
 ἄλλυδες 76.
 ἀλλῶν 357.
 ἀλμενος 386.
 ἀλοῖην 436.
 ἀλοιτής 245.
 ἄλος 63, 183.
 Ἀλοσύνη 148.
 ἄλοχος 172, 175, 245, 368.
 ἄλς 61, 164, 305.
 ἄλσος 199.
 ἄλτο 386, 425.
 ἄλντος 273.
 ἀλφαῖν 157.
 ἀλφοιν 380.
 ἀλφός 61, 156.
 ἀλῶναι 439.
 ἀλώπηξ 169, 334.
 ἀλώσομαι 397.
 ἄμα 159, 305, 322, 341, 368.
 ἀμάειν 451.
 ἀμαλός 159, 197.
 ἄμαξα 176.
 ἀμαρτάνω 416.
 ἀμαχεί 340.
 ἀμάχτος 275.
 ἀμάω 159.
 ἀμβλακίσκω 154.
 ἀμβλῦν 154.
 ἀμβλώσκω 154.
 ἀμβρόσιος 193.
 ἄμβροτος 154.
 ἀμέ 354.
 ἀμείβω 141.
 ἀμείνω 182.

ἀμέλγω 105, 138, 197, 245, 406.
 ἀμεναί 164.
 ἀμέργω 138.
 ἀμές 173, 184, 354.
 ἀμείω 87.
 ἀμητος 248.
 ἀμίν 353.
 ἄμμε 61, 109, 353.
 ἄμμες 173, 184, 354.
 ἄμμι 355.
 ἄμμιν 355.
 ἄμνός 280, 356.
 ἄμνός 61, 136.
 ἄμοθεν 175.
 ἀμορβός 277.
 ἀμόργη 73.
 ἄμός 280, 386.
 ἀμού 175.
 ἀμπεπαλῶν 407.
 ἀμπωτις 102, 194, 243.
 ἄμυδις 76, 176.
 ἄμύνω 197.
 ἄμύσσω 197.
 ἀμφήρης 67.
 ἀμφί 93, 156, 279.
 ἀμφιγροῖον 452.
 ἀμφίεννυμι 185, 401.
 ἀμφίεπα 244.
 ἀμφίκερανος 302.
 ἀμφικτιῶνες 124.
 ἀμφίρρυτος 212.
 ἀμφίς 320.
 ἀμφισβητῶ 459.
 ἀμφορεύς 200.
 ἀμφω 156.
 ἀμφῶς 183, 304.
 ἀνα 200, 279.
 ἀνά 279.
 ἀνάβλησις 273.
 ἀναβροχέιν 397.
 ἀνάγκη 292.
 ἀναδύη 85, 436.
 ἀνάθημα 236.
 ἀναΐδεια 64.
 ἀναΐδης 308, 350.
 ἀναίκος 384.
 ἀναιμος 384.
 ἀναιμασί 83, 324.
 ἀναλίσκω 415.
 ἀνάλκιδα 325.
 ἀναλκιν 325.
 ἀναλτος 62.
 ἀναπαρεῖς 98.
 ἀνάπνευστις 273.
 ἀναρ 75.
 ἀνάσσω 411.
 ἀνατέροφας 423.
 ἀνατολή 130.

ἀνδάνω 147, 416.
 ἄνδρα 329.
 ἀνδρακάς 365.
 ἀνδράποδον 103.
 ἄνδρας 329.
 ἀνδράσι 103.
 ἄνδρες 329.
 ἀνδροκτασίη 108.
 ἀνδρός 264.
 ἀνέκαθεν 365.
 ἀνελευσμένος 196.
 ἀνεμος 61, 70, 158.
 ἀνέρα 329.
 ἀνεται 175, 184.
 ἀνεψίος 65, 193.
 ἀνέργμαι 418.
 ἀνέονται 237, 420.
 ἀνέωξα 386.
 ἀνέωσθαι 237, 420.
 ἀνηνεχίαν 420.
 ἀνήνοθεν 419.
 ἀνήρ 263.
 ἀνθρώποις 320.
 ἀνιάζω 411.
 ἀνιάω 411.
 ἀνιείς 400.
 ἀντεσθαι 406.
 ἀντήλιος 173.
 ἀντί 60, 147, 257, 279.
 ἀντίος 277.
 ἀντιώω 181.
 ἀντλῶν 147.
 ἀντλος 214.
 ἀντομαι 405.
 ἀνυται 108.
 ἀνύτω 413.
 ἀνῶ 108, 164, 173, 175, 417.
 ἄνω 416.
 ἀνωγα 423.
 ἀνωγας 422.
 ἀνώγει 423.
 ἀνωγον 429.
 ἀνωμοτί 248.
 ἀνώπυμος 250.
 ἀξίνη 60, 162.
 ἄξων 61, 162.
 ἄορ 162.
 δοσσητήρ 68, 128, 129.
 ἀπάλαμνος 302.
 ἄπαν 306.
 ἄπαξ 111, 164, 172, 368.
 ἄπας 175.
 ἀπαστος 192, 241.
 ἀπαυράω 96.
 ἀπαφίσκω 415.
 ἀπέδος 175.
 ἀπειλήτην 404.
 ἀπείρων 303.

ἀπέκτατο 107.
 Ἀπέλλων 75.
 ἀπίτον 193.
 Ἀπίη 130.
 ἀπίκατο 112.
 ἀπλοῦς 111, 164, 172, 368.
 ἀπο 278.
 ἀπό 60, 246.
 ἀπόδεξις 83.
 ἀποδρύφοι 406.
 ἀπόρσε 66, 96, 157.
 ἀπόρση 168.
 ἀποκεκρουμένος 196.
 ἀπολαύω 79.
 Ἀπόλλων 75.
 ἀπολοίατο 383.
 ἀπομόργνυ 401.
 ἀπονέεσθαι 179.
 ἀποπαρών 98.
 ἀποπρίω 381.
 ἀποτελεῦτητος 273.
 ἀποτινίαν 380.
 ἀπώτροπος 274.
 ἀπούρας 96.
 ἄπω 61, 151, 173.
 δραβος 196.
 ἀραρίσκω 157, 415.
 ἀραρυῖα 418, 421.
 ἀράσσω 196.
 ἀράχνη 62, 157.
 ἄργον 74.
 ἄργός 61.
 ἀργυρόπερα 195.
 ἄργυρος 61, 138.
 ἄρδω 405.
 ἀρείων 365.
 Ἄρες 327.
 ἀρέσκω 414.
 ἀρήγειν 238, 405.
 ἀρήξειν 238.
 ἀρηρῶς 421.
 Ἄρης 327.
 ἀρθρον 62, 157.
 Ἀριάδνη 138.
 ἀρίζηλος 400.
 ἀριστάω 410.
 ἀριστεύω 412.
 ἀριστον 234.
 ἀρκέω 61, 125.
 ἄρκτος 102.
 ἄρκυς 325.
 ἄρματα 157.
 ἄρμοι 318.
 ἄρνα 168, 330.
 ἀρνασι 330.
 ἀρνεσι 330.
 ἀρνός 301, 330.
 ἀροτρον 147, 294.
 ἄρουρα 157.

ἀρόω 61, 157.
 ἀρπάζω 62, 151, 157, 410.
 ἄρπη 151, 157, 163, 172.
 ἀρρενογόνος 111.
 ἀρρώδεον 385.
 ἀρρωδέω 75.
 ἄρσας 199.
 ἄρσην 74.
 ἄρτι 194.
 ἀρτοκόπος 276.
 ἀρχέμεναι 404.
 ἀρχεύω 412.
 ἀρχω 405.
 ἀραργή 238.
 ἀραργός 238.
 ἄς 181.
 ἀσκαρίζω 197.
 ἄσμε 109.
 ἄσμενος 425, 427.
 ἀσπαίρω 101, 197, 411.
 ἄσσα 194, 359.
 ἄσσαν 143, 194.
 ἄσσειον 192.
 ἀστέρα 65, 162.
 ἀστεροπή 244.
 ἀστέρος 278.
 ἀστήρ 197, 310.
 ἀστήρσι 330.
 ἀστράπτειν 244, 413.
 ἄστν 169.
 ἄσφε 356.
 ἄσω 61.
 ἀτάλαντος 114, 175.
 ἄτερος 182.
 Ἀτθίς 195.
 ἀτιμάζω 411.
 ἀτιμάω 411.
 ἄτρακτος 124, 130.
 Ἀτρεΐδα 180, 181.
 Ἀτρεΐδαο 180, 321.
 ἀτρεκής 124.
 ἀτρέμα 277.
 ἄττα 147, 194, 359.
 αὐ 79, 406.
 αὐαῖν 174.
 αὐαλέος 174.
 αὐγή 96.
 αὐδάω 411.
 αὐδήσασκε 414.
 αὐε 406.
 αὐέρυσαν 96, 167, 170.
 αὐθέντης 108, 164.
 αὐιάχος 96, 167, 170.
 αὐληρα 169.
 αὐλώπις 306.
 αὐζάνω 96, 197.
 αὐζέτο 386.
 αὐζήσις 162.
 αὐζω 169, 406.

αὔς 174.
 αὔρη 308.
 αὔριον 246.
 αὔριος 303.
 αὖς 358.
 αὔσαι 174.
 αὖστηρός 174.
 αὖστηρός 172.
 αὔσω 174.
 αὔσας 246.
 αὔτε 406.
 αὔτει 318.
 αὐτίκα 277.
 αὐτίς 79.
 αὐτμή 90.
 αὐτοκασιγνητός 274.
 αὐτόματος 91, 108.
 αὐτόν 356.
 αὐτονυχί 324.
 αὐτός 358.
 αὐφην 143.
 αὐχένι 301.
 αὐχὴν 143, 301.
 αὔω 174.
 αὔω 172.
 άνας 165, 170, 406.
 άφαιρέσεις 273.
 άφάω 151.
 άφενος 156, 250.
 άφείκα 237, 420.
 άφίανται 420.
 άφθιτος 272.
 άφθίτου 272.
 άφίει 387.
 άφίεμεν 237.
 άφίημι 237.
 άφίην 237.
 άφίησι 193.
 άφλαστον 197.
 άφλοισμός 196.
 άφρός 143, 156, 296.
 άχθομαι 398.
 άχλὺς 61, 140.
 άχνη 61, 143.
 άχομαι 231.
 άχος 145.
 άχρειος 266.
 άχρείος 266.
 άχυρον 61.
 άχώ 63.
 βάγος 167.
 βαδιεί 431.
 βαδύ 167.
 βάθι 116.
 βαθίαν 364.
 βάθος 8, 136, 143, 307.
 βάθρον 300.

βαθυδίνης 273.
 βαθύκολπος 273, 275.
 βαθύς 109, 136, 310, 364.
 βαίην 436.
 βαίνω 106, 114, 135, 408, 411.
 βάκτρον 62, 147, 153, 424.
 βάλανος 62, 136, 141.
 βαλεῖν 245, 405, 440.
 βάλλειν 222.
 βάλλω 74, 99, 136, 137, 408, 411.
 βάλοισθα 377.
 βαμβάω 154.
 βαμβάινω 154, 409.
 βαμβαλύω 154.
 βάμην 239.
 βανά 135, 137, 250.
 βαπτός 192.
 βάπτω 143, 414.
 βάραθρον 74.
 βάρβαρος 62, 154.
 βάρος 307.
 βαρύς 97, 102, 113, 135, 296, 326.
 βάσεις 295, 325, 348.
 βάσει 295.
 βάσεις 327, 348.
 βασιλέα 183.
 βασιλέως 183.
 βασιλεύς 327.
 βασιλεύσι 329.
 βασιλεύω 409, 412.
 βασιλέως 183, 327.
 βασιλῆα 181, 387.
 βασιλῆες 180, 404.
 βασιλῆος 181.
 βασιλῆς 328.
 βάσις 108, 193, 295, 326, 348.
 βάσκανος 154.
 βάσκειο 155.
 βάσκω 414, 420.
 βαστάζειν 141, 162.
 βάτην 116, 393.
 βατός 91, 108.
 βάτραχος 154.
 βαύβυκος 154.
 βαφή 143.
 βδέω 199.
 βεβάσι 379.
 βεβᾶκα 20, 107.
 βεβαώς 20.
 βέβηκα 424.
 βέβηκε 240.
 βεβηλός 240.
 βεβίηκε 425.
 βεβλάστηκα 418.
 βέβληται 381.

βεβλήται 112, 383.
 βέβρεκται 192.
 βεβυσμένος 196.
 βείκατι 166, 167.
 βείρακες 167.
 βέλεμνον 404, 440.
 βέλος 101, 222, 224, 245.
 βέλφις 136.
 βένθος 109, 136, 143, 364.
 βέομαι 137, 432.
 βέρεθρον 74, 137.
 βέφυρα 137.
 βῆ 385.
 βῆης 431.
 βῆθι 392.
 βῆμα 240.
 βῆναι 439.
 βήσετο 426.
 βήσσα 194.
 βήσσω 194.
 βήτην 116, 393.
 βία 135.
 βιβάω 240.
 βιβας 240, 398.
 βιβάσθων 240.
 βίβασι 240.
 βιβати 240.
 βιβρώσκω 136, 415.
 βιβῶ 431.
 βιβῶντα 400.
 βιβῶσα 400.
 βιδεῖν 167.
 βίδεοι 167.
 βίηφι 323.
 βίος 135, 137.
 βίος 136.
 βισχύν 167.
 βιώσωμαι 397.
 βλάβεται 405.
 βλάβομαι 231.
 βλάπτω 414.
 βλαστάνω 168, 416.
 βλαστός 155.
 βλέπω 136, 249, 405.
 βλέφαρον 136.
 βλέφυρα 137.
 βλήεται 431.
 βλήρ 137.
 βλητός 114.
 βληχάν 154.
 βληχαν 136.
 βλίττω 155.
 βλοσυρώπις 306.
 βλύω 154.
 βλωθρός 141.
 βλώσκω 102, 155, 415.
 βοαθησίω 430.
 βοᾶν 136.
 βύας 182.

- βοάω 411.
 βόες 182.
 βοή 64, 136, 155.
 βοηδρόμος 276.
 βούβρος 68.
 βοικίαι 167.
 βοιωτοί 83.
 βόλβος 141, 213.
 βόλεται 113.
 βολή 137, 222, 224, 245.
 βόλλομαι 183.
 βόλομαι 405.
 βορά 67, 113, 136.
 βορέας 113.
 -βόρος 72.
 βόσις 243.
 βόσκει 242.
 βόσκει 414.
 βοτάνη 243.
 βοτήρ 243.
 βοτήρας 297.
 βοτόν 242.
 βουβαλίσ 154.
 βούβαλος 154.
 βουκόλος 127, 130, 245.
 βούλει 381.
 βουλεύω 412.
 βουλήσσομαι 397.
 βούλομαι 168.
 βουλυντός 95.
 βούς 69, 84, 136, 183, 296, 328, 347.
 βουφόρας 137.
 βοῶπις 247, 306.
 βραβεύς 155.
 βραδύς 102, 104, 141, 155, 310.
 βρακεῖν 105.
 βράκος 167.
 βράσσω 154, 168.
 βράσων 194, 310, 365.
 βραχεῖν 232.
 βραχύς 75, 87, 109, 145, 296.
 βρέμω 155, 244.
 βρέφος 136.
 βρέχω 168.
 βρήτωρ 167.
 βριαρός 154.
 βρίθω 397.
 βρόδον 167.
 βρόμος 244.
 βρόξι 154.
 βρόταχος 154.
 βροτός 68, 105, 155.
 βροχέας 75.
 βρύω 97, 154.
 βραπτός 115.
 βυσσός 194.
 βωλήμενος 404.
 βωμός 240.
 βῶν 206, 306.
 βωρσέα 167.
 βῶς 136, 328.
 βῶσαντι 182.
 βωτῆρες 69.
 βωτιάνειρα 194, 242, 294.
 βώτορας 297.
 βώτωρ 242.
 γα 74.
 γᾶ 138.
 γαγγαλίξω 216.
 γαγγανεύω 134.
 γαδεῖν 167.
 γάδεσθαι 167.
 γαῖα 138.
 γαῖω 81, 138, 246.
 γακτός 167.
 γάλωος 70.
 γάλως 138.
 γαμβρός 154.
 γαμέτρας 181.
 γαμφαί 138.
 γανδάνειν 167.
 γάννται 401.
 γαργαίρω 101, 409.
 γάργαρα 135.
 γαργαρέων 135.
 γαστήρ 141.
 γαστήρσι 330.
 γατειλαί 167.
 γαῦρος 79, 138, 246.
 γε 166.
 γέαρ 167.
 γεγάσι 107, 223, 379.
 γέγαθε 246.
 γεγάκειν 20, 423.
 γέγαμεν 107, 245, 419, 421.
 γεγάτην 428.
 γεγαῶς 20, 107.
 γεγευμένος 196, 422.
 γέγηθε 246.
 γέγονα 60, 107, 224, 245, 417, 419.
 γεγόναμεν 419, 421.
 γέγραπται 418.
 γεγράφει 111.
 γεγράφαι 112.
 γεγράψαι 381.
 γεγραφῆσθαι 383.
 γεγράφεται 431.
 γέγωνα 137.
 γεγαυμένος 423.
 γεγῶς 107.
 γεινία 301.
 γελᾶντι 180.
 γελῶω 393.
 γέλοιος 266.
 γελοῖος 277.
 γέλαφ 313.
 γελῶσυντες 180.
 γέλωος 313, 393.
 γέμματα 167.
 γενειάσκει 414.
 γενεῖσθαι 232, 280, 406.
 γενέτειρα 272.
 γενετήρ 70, 114, 280.
 γένη 181, 331.
 γενοῖατο 112, 383.
 γενόμενος 272.
 γερόμεσθα 382.
 γένος 72, 134, 158, 223, 245, 302, 331.
 γένους 65, 81, 160, 165.
 γέντο 425.
 γένυς 65, 135, 326.
 γένυσσι 326.
 γέρα 331.
 γερουσία 331.
 γέραν 138, 331.
 γευσιαίω 112.
 γεύω 138.
 γεφυρώω 412.
 γεωμέτρα 275.
 γεωμέτρης 275.
 γήθειν 149.
 γηθῶ 398.
 γήθια 167.
 γήρε 331.
 γήρας 310, 331.
 γηράσκω 414.
 γηράσσομαι 397.
 γίγνομαι 134, 135, 223, 245, 397, 407.
 γιγνώσκω 68, 137, 415, 420.
 γίς 167.
 γιτέα 167.
 γίτων 82.
 γλάγος 62.
 γλαυκώπιδα 325.
 γλαυκῶπιν 325.
 γλαυκῶπις 306.
 γλάφω 231.
 γλέφαρον 136.
 γλήχων 136.
 γλυκύς 157, 296, 310.
 γλύφω 94, 156, 232, 405.
 γλώσσα 194, 293.
 γνῆθος 135.
 γνήσιος 241.
 γνητός 114, 115.
 γνόντες 396.
 γνώμενα 439.

γνώσομαι 429.
 γνωτός 68.
 γοάω 136.
 γοι 166.
 γοῖδα 167.
 γόμφος 138.
 γόνυ 304.
 γογή 224, 245.
 γόνος 223, 245.
 γόνυ 138, 304.
 γούος 136, 155.
 γοργός 135.
 Γοργώ 335.
 γούργυς 167.
 γούνατος 304.
 γουνός 185.
 γουνοῦσθαι 182.
 γράμμα 196.
 γραῦς 138.
 γραφής 327.
 γράφω 74, 231, 405.
 γυάλον 135.
 γυμνῶ 411.
 γύναι 200, 275.
 γυναιξί 329.
 γυνή 135, 137, 250, 275.

δα 138.
 δαήρ 149, 294.
 δαηται 246.
 δαιδάλλω 101, 409.
 δαίδαλος 101.
 δαιδύσσεσθαι 148.
 δαῖνον 401.
 δαινύτο 85.
 δαῖρος 277.
 δαῖς 246.
 δαῖον 246.
 δάκνω 416.
 δάκρυ 60, 147.
 δακρύνω 409.
 δάλλει 101.
 δαμᾶ 431.
 δαμᾶν 251.
 δάμαρ 304.
 δαμάττηρ 138.
 δαμάω 147.
 δάμεν 398.
 δάμνημι 403.
 δάμοι 318.
 δανείζω 147, 242.
 δάος 246.
 δαπάνη 60, 147.
 δάπεδον 138, 148.
 δαρβάνω 104, 147.
 δαρσις 102.
 δαρτός 100.
 δασύς 109, 147, 296.

Δανίδ, Δαβίδ, 84.
 Δαυλός 147.
 δαυλός 147, 277.
 δαύχνα 143.
 δάφνη 143.
 δεδάηκε 425.
 δεδαρμένος 99, 244.
 δεδαυμένος 246.
 δέδεμαι 237.
 δέδετο 237.
 δέδε 246.
 δέδεκα 237.
 δέδια 419.
 δεδίασι 379.
 δεδιείην 390, 437.
 δεδιέναι 439.
 δεδίσκομαι 415.
 δεδίττεσθαι 415.
 δεδιώς 420.
 δέδμημι 420.
 δέδορκα 59, 224, 417, 419.
 δέδορκε 67, 244.
 δέδοται 242.
 δέδρομε 244.
 δέδουκε 425.
 δειδέχεται 112, 423.
 δεΐδια 20.
 δεΐδιαι 422.
 δεΐδιθι 420.
 δεΐδιμεν 20, 419.
 δεΐδίσκομαι 415.
 δεΐδίσσεσθαι 415.
 δεΐδοικα 415, 424.
 δεΐδω, 20, 95, 419.
 δεΐκνυμι 79, 133, 147, 401.
 δεΐκνύω 395.
 δεΐνα 359.
 δεΐξαιμι 426, 437.
 δεΐξας 426.
 δεΐξατε 433.
 δεΐξειαν 437.
 δεΐζω 429.
 δειπνολόχος 276.
 δειπνον 197.
 δέκα 65, 110, 147, 257, 370.
 δεκάμηνος 304.
 δέκατος 110, 111, 365, 371.
 δεκάχιλοι 371.
 δέκτης 294.
 δέκτο 425.
 δέλεαρ 137.
 δέλφαξ 136.
 δελφίς 136, 335.
 δελφύς 137.
 δέμα 148, 245, 249.
 δεξαμένη 276.
 δέξατο 425.
 δειξίος 65, 148, 162.

δέξο 425.
 δέος 95.
 δέπα 331.
 δέπας 147.
 δέρεθρον 137.
 δερή 64.
 δέρομαι 90, 223, 224, 227, 244, 405.
 δέρω 100, 244.
 δέσις 237.
 δεσμός 237, 293.
 δέσποινα 197.
 δέσποτα 60, 321.
 δεσπότης 150, 199, 272.
 δέχεται 112, 419.
 δεύασθαι 138.
 δέουμαι 170.
 δέυρο 359.
 Δεύς 171.
 δεύτατος 371.
 δεύτε 359.
 δεύτερος 371.
 δής 432.
 δήιον 246.
 δηλόμαι 148.
 δηλήμων 101.
 δηλώω 95.
 δηλώτον 182.
 δημο 179.
 δημοβόρος 276.
 Δημοσθένης 308.
 δην 147.
 δῆνος 184.
 Δία 279.
 διά 279.
 διάδημα 237.
 διαί 279.
 διαίτα 137.
 διακέρσαι 199.
 διακόσιοι 165, 193, 371.
 διαπαρή 98.
 διαπραθέειν 98.
 διαπρύσιος 76.
 διατρυφέν 397.
 διαφθέρει 431.
 διαφρήσουσι 400.
 διδάσκεμεν 415.
 διδάσκω 148, 250, 415.
 διδάς 237.
 διδῃ 237, 398.
 διδῶσι 379.
 διδοῖην 436.
 διδοῖμεν 436.
 διδοῖς 400.
 διδομαι 242.
 διδομεν 100, 230, 399.
 διδόναι 439.
 διδοντι 399.
 διδου 435.

- διδούς 330.
 διδοῦσι 379, 399.
 διδράσκω 415.
 διδυμος 134, 138.
 διδωθί 400, 410.
 διδωμι 6, 70, 100, 147, 236,
 242, 375, 398, 399.
 διδως 377.
 διδωσι 18, 193.
 διδωσι 377.
 διέκριθεν 398.
 διέμαι 409.
 διενται 409.
 διερós 137.
 διέσθαι 20, 406.
 διεσπασμένος 196.
 διέφθορα 245, 419.
 δίξε 407.
 δίξαι 381.
 ἰδίξημαι 400, 407, 410.
 διζήμενος 248.
 δίζομαι 400.
 διῖπετής 83.
 διίφιλος 295.
 δικάζω 410.
 δικεῖν 232.
 δίκη 93, 133, 147.
 δινέω 417.
 δινίας 82.
 διό 280.
 διόζωτος 165.
 δίομαι 409.
 δίον 20, 406.
 δίος 147.
 διπλά 182.
 διπλόα 182.
 δίσ 372.
 διφάσιος 372.
 διφοῦρα 137.
 δίφα 194.
 διψήν 64, 180.
 διώκετον 380.
 διωνύσοε 83.
 δμᾶτός 114.
 δμηθέντα 398.
 δμήτειρα 290.
 δμῶς 147.
 δοάν 147.
 δοφέναι 438.
 δοθήσομεθα 6.
 δοῖν 242.
 δοῖμεν 436.
 δοῖμην 436.
 δοκέω 148.
 δολιχός 116, 364.
 δόλος 148.
 δόλφος 136.
 δόμεν 332, 439.
 δόμεναι 439.
 δῆμος 67, 245, 249.
 δέφα 194.
 δορά 244.
 δόρν 304.
 δός 433.
 δόσις 242.
 δότε 433.
 δοτέος 440.
 δοτέρι 299.
 δοτέρος 299.
 δοτήρ 8, 242, 300.
 δοτήρες 297.
 δοτήρος 289, 299, 300.
 δοτός 70, 147, 236.
 δουλεύω 21.
 δούλος 21.
 δουλῶται 182.
 δούναι 324, 438.
 δούρατος 304.
 δουρός 185.
 δούς 334.
 δράκαινα 331.
 δράκων 331.
 δράσσομαι 408.
 δρατός 100.
 δρομύς 295.
 δρόμος 99, 244.
 δρυί 84.
 δρύς 294, 326.
 δρύφακτος 199.
 δύας 369.
 δύνε 369.
 δυνεῖν 319, 369.
 δύν 246.
 δυναίατο 112.
 δύναμαι 138, 403.
 δυναμένη 403.
 δύνασαι 381.
 δυνάται 383.
 δύνω 416.
 δύο 94, 368, 369.
 δυοῖσι 369.
 δύσέτο 426.
 δυσί 369.
 δυσκλέα 331.
 δυσμενέα 300.
 δυσμενείς 332.
 δυσμενής 334.
 δύσχιμος 143, 144, 305.
 δύνω 94, 369.
 δύνων 319, 369.
 δῶ 249.
 δώδεκα 275, 368.
 δώομεν 183.
 δῶρον 68, 147, 242, 394.
 δωσέμεναι 439.
 δώσω 6, 242, 429.
 δωτήρ 242.
 δῶτις 242, 295.
 δῶτορ 297.
 δῶτορα 297, 298, 299, 301,
 306.
 δῶτορες 300.
 δῶτορος 300.
 δῶτωρ 242, 298, 299, 300.
 ξ, ἐξ 170, 172, 355.
 ἐάγη 386, 387.
 ἐάγην 386, 397, 409.
 ἐαδύτα 418, 421.
 ἐάλη 386, 397.
 ἐάλωκα 387, 417.
 ἐάλαν 387, 396, 397.
 ἐανός 168.
 ἐαξε 386.
 ἐαρ 168, 305.
 ἐας 395.
 ἐασι 106, 111, 379.
 ἐασσα 305, 391.
 ἐαται 393.
 ἐατε 395.
 ἐαυτόν 356.
 ἐάω 164.
 ἐβάθη 137.
 ἐβαλον 99, 114, 226.
 ἐβαν 380, 394.
 ἐβάσθην 398.
 ἐβδύματος 365.
 ἐβδομος 110, 371.
 ἐβη 240.
 ἐβην 393, 395.
 ἐβησαν 380.
 ἐβήσετε 240, 428.
 ἐβίαν 396, 397.
 ἐβλάστηκα 418.
 ἐβλαστον 388, 413.
 ἐβλην 396, 410.
 ἐβουλεύετε 267.
 ἐβούλευον 267.
 ἐβράχην 98.
 ἐγγύη 135.
 ἐγέγραφο 381.
 ἐγέγραψε 423, 428.
 ἐγείρω 399, 408.
 ἐγέλαν 410.
 ἐγεμον 388.
 ἐγενόμην 388, 407.
 ἐγερός 100.
 ἐγερώ 245.
 ἐγήραν 396, 397, 430.
 ἐγήρασα 430.
 ἐγήρασαν 397.
 ἐγκάσιος 217.
 ἐγκάς 365.
 ἐγκεύω 133.
 ἐγκυτί 133, 194.
 ἐγκώμιον 132.

- ἔγνωκα 418.
 ἔγνω 396.
 ἔγνωσαν 380.
 ἔγραψεν 397.
 ἔγραψεν 193.
 ἔγραψον 388.
 ἔγρεσθαι 245.
 ἔγρηγορα 419.
 ἔγρηγορε 245.
 ἔγρηγόρεσαν 429.
 ἔγχευς 145, 305.
 ἔγω 21, 24, 75.
 ἔγων 354, 359.
 ἑδάμασα 428.
 ἑδάμνα 400.
 ἑδαφος 174.
 ἑδεθλον 174, 199.
 ἑδεδιμεν 428.
 ἑδειν 65.
 ἑδειξα 16, 376, 427.
 ἑδείξαμεν 426.
 ἑδείξαμεν 426.
 ἑδείξας 426.
 ἑδείξατο 426.
 ἑδείξε 376, 426.
 ἑδεξα 83.
 ἑδηδοκα 418.
 ἑδηδώς 67, 418.
 ἑδησε 237.
 ἑδιδουν 399.
 ἑδιδω 242.
 ἑδιήτων 387.
 ἑδοκίμων 410.
 ἑδομαι 432.
 ἑδομεν 242, 393.
 ἑδον 242.
 ἑδοντες 75.
 ἑδος 148, 163, 172, 174, 309.
 ἑδοτο 394.
 ἑδρα 65.
 ἑδρακον 99, 224, 227, 244.
 ἑδραμον 244.
 ἑδραν 396, 410.
 ἑδυν 393.
 ἑδύσσετο 428.
 ἑδω 148.
 ἑδωδή 249.
 ἑδωκα 244.
 ἑδωκε 242.
 ἑείκοσι 197.
 ἑειπε 386.
 ἑειπον 407.
 ἑελέμενος 418.
 ἑέργειν 66, 169.
 ἑέργην 401.
 ἑέρση 197.
 ἑέρχατο 112.
 ἑέσα 427.
 ἑέσσα 195.
 ἑξενυγμένος 418, 421.
 ἑξην 396.
 ἑξήτηκα 384.
 ἑξήτησα 384.
 ἑξομαι 65, 195, 407.
 ἑξωσμαι 402.
 ἑξώσμεθα 422.
 ἑξωσμένους 196.
 ἑηκε 237.
 ἑηος 327.
 ἑθανον 142, 422.
 ἑθέλησθα 377.
 ἑθέλησι 376.
 ἑθίλω 143.
 ἑθέλωμι 376, 441.
 ἑθεμεν 236, 393.
 ἑθέμην 236.
 ἑθεσαν 380.
 ἑθετο 394.
 ἑθηκα 236, 374, 424.
 ἑθηκας 374.
 ἑθος 149.
 ἑθώκατι 111, 379.
 εἰ 82.
 εἰ 269, 376.
 εἰα 64.
 εἰαμένη 276.
 εἵαται 112, 382, 393.
 εἵατο 383.
 εἵδαρ 303.
 εἵδειν 390.
 εἵδειν 428, 436.
 εἵδμεν 436.
 εἵδναι 439.
 εἵδήσω 430.
 εἵδομαι 223, 245.
 εἵδομεν 420, 432.
 εἵδον 386.
 εἵδόσι 332.
 εἵδώς 269, 312, 332, 421.
 εἶεν 380, 436.
 εἶη 17.
 εἶην 238, 376, 436.
 εἶης 67.
 εἶθε 82.
 εἵκασμαι 417.
 εἵκάσμεθα 387.
 εἵκοσάκις 367.
 εἵκοσι 133, 165, 280, 370.
 εἵκοστός 370.
 εἵκτην 374, 419, 428.
 εἵκτον 93, 229.
 εἵκω 169.
 εἵκω 330, 335.
 εἵκω 82.
 εἵλαπην 169, 197.
 εἵλατινος 184.
 εἵλη 197.
 εἵληλουθα 223, 245, 419.
 εἵληλουθμεν 196, 419.
 εἵληφα 418.
 εἵληχα 418.
 εἵλιχαται 112.
 εἵλιχατο 423.
 εἵλοχα 245.
 εἵλω 169.
 εἵμα 196.
 εἵμαι 20, 196, 402, 422.
 εἵμαρται 99, 419.
 εἵμάτιον 82.
 εἵμεν 93, 238, 393, 436.
 εἵμεν 391.
 εἵμένους 196, 402.
 εἵμι 8, 9, 97, 223, 228, 245, 271, 389, 390, 395.
 εἵμι 20, 23, 225, 269, 390.
 εἵν 158.
 εἵνατρες 116, 158, 171, 300.
 εἵνεκα 184.
 εἵνοσίγαιος 184.
 εἵνοσίφυλλος 169, 243.
 εἵνυμι 402.
 εἵσαι 379, 383, 423.
 εἵο 355.
 εἵπα 376, 394.
 εἵπασαν 380.
 εἵπεμεν 439.
 εἵπεμεναι 439.
 εἵπετο 386.
 εἵπον 407.
 εἵπωμι 374.
 εἵργαζόμεν 387.
 εἵργασμαι 387, 417.
 εἵρησεται 431.
 εἵρος 197.
 εἵρων 386.
 εἵρύαται 383.
 εἵρύατο 383.
 εἵρυμένους 196.
 εἵρυσσα 386.
 εἵρω 169.
 εἵς 18.
 εἵς 334, 376.
 εἵς 270, 376.
 εἵς 305, 368.
 εἵσα 386.
 εἵσσα 390.
 εἵσι 21.
 εἵσι 270.
 εἵσκα 199, 415.
 εἵστήκει 429.
 εἵστήκει 429.
 εἵσω 199.
 εἵτεν 74.
 εἵχον 386.
 εἵωθα 418.
 ἐκ 200.

- ἐκάεργος 322.
 ἐκαθήμην 387.
 ἐκάβριον 387.
 ἐκάλεσα 430.
 ἔκανον 245.
 ἐκάς 365.
 ἐκασταχοῦ 367.
 ἐκαστέρω 365.
 ἔκαστος 166, 365.
 ἐκάτερος 365.
 ἔκατι 322.
 ἐκατόμβη 328.
 ἐκατόν 106, 132, 147, 261, 280, 370.
 ἔκαυσα 83.
 ἐκβασίς 273.
 ἐκγεγάτην 107.
 ἐκδιδάται 383.
 ἐκδοτος 273.
 ἐκδύμεν 84.
 ἐκείνος 358.
 ἐκειρα 427.
 ἐκεκῆδει 238.
 ἐκέκλετο 224, 245.
 ἐκέρδανα 427.
 ἐκεχειρία 200.
 ἐκηβόλος 276, 322.
 ἐκθρών 193.
 ἐκίνουν 401.
 ἐκιον 406.
 ἐκίρνα 400.
 ἐκλάπην 249.
 ἐκλέλαθον 407.
 ἐκλίθῃ 398.
 ἐκλίνθη 398.
 ἐκύρεσα 403, 428, 430.
 ἐκπαγλός 199.
 ἐκπέτασις 273.
 ἐκπίπτω 397.
 ἐκποδών 280, 281.
 ἐκραγον 99.
 ἔκτα 107, 394.
 ἔκταμεν 107, 394.
 ἔκταν 107, 425.
 ἔκτανον 245.
 ἔκτεινα 427.
 ἔκτενα 394.
 ἔκτεννα 408.
 ἐκτῆμαι 418.
 ἔκτοθεν 365.
 ἔκτονε 245.
 ἔκτος 371.
 ἐκτός 192.
 ἐκτοσθεν 365.
 ἐκυρά 258.
 ἐκυρός 133, 258.
 ἐκφρες 100, 400.
 ἐκών 172.
 ἐλάα 28.
 ἐλάβοσαν 380.
 ἐλαβε 240.
 ἐλαβον 230.
 ἐλαία 157.
 ἐλαίη 64.
 ἐλαιον 157.
 ἐλακον 247, 251.
 ἐλάμφθην 398.
 ἐλάνη 169.
 ἐλάσσαι 428.
 ἐλάσσαν 142, 194, 364.
 ἐλάσσω 182.
 ἐλάττους 180.
 ἐλαύνω 157.
 ἐλαφνύβλος 277.
 ἐλαφοκτόνος 277.
 ἐλαφρός 142.
 ἐλαχον 106.
 ἐλαχύς 87, 108, 142, 145, 156, 196, 296, 310, 364.
 ἐλέγγην 409.
 ἐλεγκθέντος 193.
 ἐλέγχιστος 194.
 ἐλέγχω 405.
 ἐλειπον 384.
 ἐλέλικτο 425.
 ἐλελιζόμενος 425.
 ἐλευθέριος 15, 149, 196.
 Ἐλευσίς 294.
 ἐλεύσομαι 223, 224, 245.
 ἐλήλεγμα 418.
 ἐλήλυθα 418, 419.
 ἐλήφθην 398.
 ἐλθεῖν 232, 406.
 ἐλθετῶς 434.
 ἐλίπην 396.
 ἐλιπον 93, 106, 224, 245, 269.
 ἐλίσσω 169.
 ἔλκα 405.
 ἐλλά 215.
 ἐλώσι 431.
 ἐλπίδα 295.
 ἐλπίζω 410.
 ἐλπίς 169, 295.
 ἐλπομαι 71, 405.
 ἐλσαι 199, 427.
 ἐλυνε 374.
 ἐλυνον 374.
 ἐλυσα 8.
 ἐλυσαν 379.
 ἐλὼν 232, 406.
 ἐμαθον 107.
 ἐμάνην 396, 397.
 ἐμαυτὸν 356.
 ἐμβατος 284.
 ἐμβραται 99, 154.
 ἐμέ 24, 159.
 ἐμείο 159, 355, 395.
 ἐμέμηκον 423, 429.
 ἐμενα 184.
 ἐμέο 355, 360.
 ἐμέος 360.
 ἐμετός 70.
 ἐμεῦς 360.
 ἐμ 179.
 ἐμίν 353, 355.
 ἐμίσθωσα 428.
 ἐμμενίω 75.
 ἐμμορα 99.
 ἐμμορε 419.
 ἐμνησα 427, 428.
 ἐμνώοντο 180.
 ἐμοί 356.
 ἐμολον 102.
 ἐμός 280, 356.
 ἐμού 21, 280, 355, 360.
 ἐμοῦς 360.
 ἐμμαος 140.
 ἐμπίπληθι 400.
 ἐμπιπράσι 400.
 ἐμπίς 138.
 ἐν 75, 158.
 ἐναι 179.
 ἐνατος 110, 111, 365, 370.
 ἐνδεᾶ 181.
 ἐνδελεχῆς 116, 364.
 ἐνδίσαν 409.
 ἐνδυκῆος 148.
 ἐνδυσε 384.
 ἐνεγκεῖν 158, 251.
 ἐνεγκον 134.
 ἐνεμα 427.
 ἐνεκα 74, 184, 322.
 ἐνεκεν 74.
 ἐνενηκοντα 370.
 ἐνέπλησαν 100.
 ἐνέπρηθον 400.
 ἐνεροι 366.
 ἐνέρτερος 365.
 ἐνήνοχα 134, 418, 419.
 ἐννηντιώμεθα 387.
 ἐνθα 72, 149.
 ἐνθεος 182.
 ἐνθουσιᾶν 182.
 ἐνί 158.
 ἐνιπῆ 130.
 ἐνιπτόμην 388.
 ἐνίπτω 130, 414.
 ἐνίσπες 433.
 ἐνίσω 128, 130, 414.
 ἐννάκις 370.
 ἐννατος 370.
 ἐννα 87, 110, 158, 170, 280, 368, 370.
 ἐννεάπηχυς 273.
 ἐννεάχιλοι 371.
 ἐννεκα 184.

- ἔνεπε 130, 257.
 ἐνήκοντα 370.
 ἐννοσίγαιος 169.
 ἐννοσίδης 138.
 ἐννυμι 168, 172, 199, 402.
 ἔνος 65, 158, 163, 172.
 ἐνοσίχθων 184.
 ἐνταυθοῖ 318.
 ἔντες 305.
 ἐντί 391.
 ἐνωπή 247.
 ἐξ 162.
 ἐξ 65, 163, 170, 369.
 ἐξαίφνης 197.
 ἐξάκις 277, 367.
 ἐξαντλεῖν 214.
 ἐξαῦσαι 176.
 ἐξαστήρ 86.
 ἐ'αχῇ 367.
 ἐξεπλάγη 240.
 ἐξεπλάγησαν 240.
 ἐξήσφαθε 407.
 ἐ'ω 143, 174, 224.
 εἰο 355.
 εἰοί 391.
 εἰοί 356.
 εἰοιγμέν 419.
 εἰοικα 229, 418, 419.
 εἰοικαμέν 419.
 εἰοικας 374, 422.
 εἰοίκασι 423.
 εἰοίκεσαν 429.
 εἰολπα 151, 169, 418.
 εἰώρακα 387, 417.
 εἰορτή 182.
 εἰός 170, 356, 361.
 εἰπάγην 150, 397.
 εἰπαθον 106, 225.
 εἰπαινῶ 75.
 εἰπαινῶμεν 181.
 εἰπακτος 235.
 εἰπαρδον 98.
 εἰπαργός 274.
 εἰπασσύτεροι 76.
 ἐπείγω 405.
 ἐπεισφρώ 100, 400.
 ἐπειτα 74.
 ἐπειτεν 74.
 ἐπειγής 193.
 ἐπέπιθμεν 196, 229, 245, 374, 421, 428.
 ἐπέπληγον 423.
 ἐπέπλως 396.
 ἐπεπόμφει 423.
 ἐπεσθαί 163.
 ἐπεσπον 244.
 ἐπεσσι 195, 330.
 ἐπεστάτων 387.
 ἐπεστι 271, 284.
 ἐπέτασα 403.
 ἐπεφνε 245.
 ἐπέφνομεν 407.
 ἐπεφνον 223.
 ἐπηετανός 308.
 ἐπημοιβός 274.
 ἐπι 278.
 Ἐπίασσα 390.
 ἐπίβδαι 234, 306, 346.
 ἐπιβήτωρ 240.
 ἐπιγράβδην 193.
 ἐπισαρέω 137.
 ἐπιθον 57, 89, 93, 225.
 ἐπιμῶθής 107.
 ἐπίπῶν 275.
 ἐπίπλοον 150.
 ἐπιπλῶς 396.
 ἐπιπολῆς 150.
 ἐπισχερώ 280.
 ἐπίσχει 275.
 ἐπιτετράφαται 423.
 ἐπίτονος 274.
 ἐπιτοπολῶ 280.
 ἐπλάγχθην 151.
 ἐπλεον 182.
 ἐπλετο 57, 129.
 ἐπλέχθην 192.
 ἐπλήγην 397, 408.
 ἐπλήμην 400.
 ἐπλόμην 90.
 ἐποίει 269.
 ἐποίουν 347.
 ἐπομαι 65, 129, 223.
 ἐπούπτης 250.
 ἐπορον 152.
 ἐπος 67, 169, 244, 357.
 ἐπον 471.
 ἐποχή 244.
 ἐποψ 151, 250.
 ἐπράθετο 98.
 ἐπραθον 98.
 ἐπριάμην 130.
 ἐπρίω 381.
 ἐπτά 65, 91, 110, 163, 369.
 ἐπτарон 99, 245.
 ἐπταχα 367.
 ἐπτην 395.
 ἐπτόμην 57, 227, 244.
 ἐπυθόμην 199, 227, 228.
 ἐπώχατο 112, 419.
 ἐράσθε 393.
 ἐραμαι 196.
 ἐράομαι 393, 395.
 ἐραται 392.
 ἐρατός 108, 280.
 ἐράω 393.
 ἐργον 166, 244.
 ἐρδον 385.
 ἐρδω 137, 408.
 ἐρεβεννός 402.
 ἐρέβινθος 157.
 ἐρεβος 64, 136.
 ἐρείκα 196, 213.
 ἐρείπω 405.
 ἐρεμνός 136.
 ἐρέσσαι 428.
 ἐρέσσω 194.
 ἐρετμός 157, 196, 251.
 ἐρεύγομαι 157, 196, 405.
 ἐρεύθω 80, 405.
 ἐρεφος 196.
 ἐρεφω 244.
 ἐρέω 66, 169.
 ἐρημος 266.
 ἐρηρέδαται 112, 423.
 ἐρίδα 295, 325.
 ἐρίζεσκιν 414.
 ἐριον 66, 168.
 ἐρις 295.
 ἐρίσδειν 195.
 ἐριφος 251.
 Ἐρμείας 83.
 Ἐρμείας 83.
 Ἐρμείω 180, 321.
 ἐρξαν 385.
 ἔρος 393.
 ἔρωα 65, 152, 163, 172.
 ἐρράγην 238, 397.
 ἐρρηγεία 312.
 ἐρρηξα 238.
 ἐρρυκα 418.
 ἐρρύνην 198, 244, 396, 397.
 ἐρρωα 224, 418, 420.
 ἐρρωγι 238.
 ἐρυθρός 94, 149, 196, 294.
 ἐρύουσι 431.
 ἐρύσσομεν 431.
 ἐρύω 396.
 ἐρχαται 112, 419, 423.
 ἐρωδιός 157, 251.
 ἐρωή 69.
 ἔρωα 313, 393.
 ἐς 18.
 ἐς 433.
 ἔσαν 237.
 ἐσβεσμαι 402.
 ἐσβην 396.
 ἐσβην 396, 397.
 ἐσδῆλιν 99.
 ἐσδῆλλοντες 74, 136.
 ἐσεσάχαται 112.
 ἐσεσάχατο 423.
 ἐσκευάδατο 112, 423.
 ἐσκέψομαι 431.
 ἐσθής 66, 162, 168.
 ἐσθλός 294.
 ἔσμαι 20.

ἑσμέν 20, 228, 270, 289,
374, 402, 420.
ἑσομαι 8.
ἑσπαρται 99.
ἑσπερος 168, 173.
ἑσπεῖσθαι 244, 407.
ἑσπεται 407.
ἑσπετε 130, 164.
ἑσπιφράναι 100, 400.
ἑσποιτο 407.
ἑσσαι 419.
ἑσσεῖται 431.
ἑσσενα 106, 394.
ἑσσί 21, 270, 376.
ἑσσο 381.
ἑσταθι 392.
ἑστάκα 20, 299, 420.
ἑστάλῃν 98, 226.
ἑστάλθαι 439.
ἑστάλθην 98.
ἑσταλκα 425.
ἑσταλμαι 99, 245.
ἑσταμεν 239, 420, 421.
ἑσταν 380, 394.
ἑστάναι 239.
ἑσταότα 299.
ἑστασαν 427, 428.
ἑσταῶς 20, 420.
ἑστέ 270.
ἑστε 199, 433.
ἑστεῶτες 183.
ἑστηκα 418, 424.
ἑστήκασι 379.
ἑστημεν 393.
ἑστην 239, 388, 393.
ἑστήξω 431.
ἑστησα 16, 239, 427.
ἑστηῶς 420.
ἑστί 18, 20, 23, 65, 162.
ἑστι 270, 377.
ἑστία 75, 169, 173.
ἑστιχον 245.
ἑστον 281.
ἑστός 21.
ἑστραμμαι 99.
ἑστνῦα 299.
ἑστώς 21.
ἑσφάγην 397, 408.
ἑσφαξα 408, 414.
ἑσφηλα 199.
ἑσφατος 365.
ἑσχέθην 397.
ἑσχες 200.
ἑσχον 143, 165, 224, 244,
405.
ἑτάγην 408.
ἑταυρος 129.
ἑτάκην 397.

ἑταμον 114, 225.
ἑτάφην 397.
ἑταφον 199.
ἑτέθην 193, 199.
ἑτεθήπεα 429.
ἑτεκον 244, 407.
ἑτεκτήναμεν 184.
ἑτέλεσα 428, 430.
ἑτέος 237.
ἑτερος 29.
ἑτετάχατο 383, 423.
ἑτετμε 407.
ἑτετμον 128, 130, 245.
ἑτέτυκτο 428.
ἑτεύχετον 380.
ἑτήσιος 147.
ἑτι 194.
ἑτίθεμεν 236.
ἑτίθην 236, 399.
ἑτίμησα 428.
ἑτλαν 397.
ἑτμάγην 397.
ἑτοιμος 265.
ἑτος 65, 147, 169.
ἑτός 70, 237.
ἑτραγον 243.
ἑτραπον 57, 388.
ἑτραφε 98.
ἑτράφην 98.
ἑτραφον 98.
ἑτύπην 10.
ἑτύφθην 10.
εὐαδε 147, 170
εὐάζω 87.
εὐγενής 302.
εὐδα 80, 163.
εὐηργέτουν 386.
εὐκᾶλος 127.
εὐκτίμενος 124.
εὐληρα 96, 167, 169.
εὐμενῇ 181.
εὐμμελίω 180.
εὐξατο 386.
εὐπάτωρ 297.
εὐρέα 327.
εὐρίσκω 415.
εὐρύππα 169, 306.
εὐρύς 96, 197.
εὐσαβέοι 66.
εὐσεβοί 66.
εὐφραν 297.
εὐφυᾶ 181.
εὐφυῇ 181.
εὐω 80, 405, 406.
εὐώδης 247.
ἑφάν 380.
ἑφάνην 380.
ἑφάνημεν 396.

ἑφάνην 397.
ἑφασκε 239.
ἑφασκον 415.
ἑφατο 239.
ἑφερε 200.
ἑφέρετο 382.
ἑφερον 376.
ἑφέροντο 383.
ἑφέρου 381.
ἑφη 239.
ἑφην 388.
ἑφηνα 427.
ἑφησθα 377.
ἑφθάρатаи 382.
ἑφθαρην 99.
ἑφθαρκα 425.
ἑφθαρμαι 99, 419.
ἑφθαρμένος 245.
ἑφθην 394.
ἑφθιε 406.
ἑφθορα 396.
ἑφύρω 180.
ἑφράγην 408.
ἑφραξα 408, 414.
ἑφυγον 57, 89, 224, 245.
ἑφύην 233, 235.
ἑφυν 347, 393, 395.
ἑφυσμένος 196.
ἑχαδον 106.
ἑχάρην 397.
ἑχεα 374, 390, 394.
ἑχεσα 462.
ἑχενα 106, 394.
ἑχην 439.
ἑχθαίρω 15, 101, 411.
ἑχθός 197.
ἑχθίω 365.
ἑχθρός 101.
ἑχιθνα 148.
ἑχισ 145.
ἑχρῆν 385.
ἑχρησα 428.
ἑχυτο 390.
ἑχω 143, 223, 225, 244,
407.
ἑψενσμαι 418.
ἑψενσται 192.
ἑω 66, 432.
ἑωνούμην 182.
ἑώρακα 417.
ἑώραζον 387.
ἑώραν 386, 387.
ἑως 173, 246, 317.

Φείκατι 166.
Φείτην 407.
Φέξ 166.

Φεσπαρίων 166.
 Φέτος 166.
 Φιδεῖν 166.
 Φικαστή 370.
 Φίκατι 112, 166, 168, 370.
 Φιστορες 166.
 Φοῖδα 166.

φα 138.
 φαίνυμεν 402.
 φαλλειν 136.
 φαλλω 74.
 φέννυμι 401.
 φέρεθρον 74, 137.
 φέσσαι 428.
 Ζεῦ 275.
 ζεύγεα 87.
 ζεύγνυμι 401.
 ζεύγος 80.
 Ζεύς 84, 95, 195, 296, 328.
 ζεύσασθαι 138.
 ζέω 171, 405.
 ζῆ 137.
 ζῆθι 396.
 ζῆν 180.
 Ζῆν 347.
 Ζῆνα 328.
 ζῆτέω 400, 413.
 ζητεύω 413.
 Ζευρηναῖος 160.
 ζύη 183.
 Ζώνυσος 171.
 ζυγά 319.
 ζυγόν 94, 95, 127, 134, 171.
 ζυγῶ 319.
 ζύμη 95, 171.
 ζῶμα 196.
 ζώνη 402.
 ζώννυμι 401, 402.

η 144, 200, 238, 391, 392.
 ηα 376, 394, 404.
 ηα 390, 394.
 ηαται 313.
 ηβάσκει 414.
 ηβάω 411.
 ηβουλόμην 386.
 ηβώοντα 180.
 ηγάασθε 180.
 ηγαγον 407.
 ηγγεῖλα 199.
 ηγέαται 383.
 ηγείσθαι 163, 173.
 ηγεμῶν 249.
 ηγέομαι 232.
 ηγμαῖ 418.
 ηγον 386.

ηδεῖς 295.
 ηδέσι 295.
 ηδεσμένος 196.
 ηδη 387, 428.
 ηδησθα 377, 429.
 ηδιον 272.
 ηδιῶ 310.
 ηδιων 272.
 ηδομαι 405.
 ηδος 175.
 ηδυνάμην 386.
 ηδύς 295.
 ηε 285.
 ηείδη 386.
 ηέλιος 173.
 ηέριος 308.
 ηθελέτην 380.
 ηθεος 182.
 ηθος 149, 164.
 ηια 394.
 ηίθεος 93, 149, 170.
 ηίκοτο 419.
 ηκαζον 386, 387.
 ηκασα 417.
 ηκασεν 387.
 ηκαχε 407.
 ηκε 237.
 ηκον 387.
 ηκω 423.
 ηλεκτρον 141.
 ηλήλατο 428.
 ηλίκος 277.
 ηλιος 173.
 ηλεις 169.
 ηλιτον 413.
 ηλος 183.
 ηλος 169, 172.
 ηλπιζον 387.
 ηλυθον 224, 245.
 ηλφον 142.
 ημα 67, 237.
 ημαι 196, 393, 418.
 ημαρ 175, 303.
 ημαρτον 413.
 ημας 282.
 ημβροτον 99, 154, 413.
 ημε- 109.
 ημεας 354.
 ημεθα 393.
 ημείων 355.
 ημελλον 386.
 ημενος 393.
 ημέρα 303.
 ημέτερος 280, 356.
 ημί 144, 238, 392.
 ημι- 159.
 ημι- 67, 172.
 ημιν 355.
 ημιν 282.

ημιν 282, 355.
 ημίονος 274.
 ημτάλαντον 273.
 ημμαι 418.
 ημπειχόμεν 387.
 ημφεσβήτουν 387.
 ημφίεσα 403.
 ημφίεσμαι 199, 402, 422.
 ημφίεσμένος 196.
 ημῶν 282, 354.
 ημων 268.
 ην 238, 384.
 ηνεγκα 376.
 ηνεικα 394.
 ηνειχόμεν 387.
 ηνέχθην 158.
 ηνιοχῆα 412.
 ηνίοχος 412.
 ηνίπαπε 407.
 ηνίπαπον 130.
 ηνις 325.
 ηνοπι 306.
 ηνται 393.
 ηντεβόλουν 387.
 ηντετο 406.
 ηνυτο 401, 416, 417.
 ηναγον 423.
 ηῶα 299.
 ηπαρ 95, 104, 130, 171, 173,
 303, 352.
 ηπατος 303.
 ηπειρος 266.
 Ηρακλῆς 179.
 ηραρε 407.
 ηράσατο 393.
 ηράσσατο 393.
 ηργαζόμεν 387.
 ηρέμα 277, 393.
 ηρεμεί 83.
 ηρι 246.
 ηροος 183.
 ηρωακα 425.
 ηρύκακεν 407.
 ηρωα 182, 317.
 ηρωας 182.
 ηρωας 313.
 ης 385.
 ης 184.
 ησαι 381.
 ησαν 200.
 ησαν 428.
 ησατο 426, 427.
 ησθα 377, 422.
 ησθα 439.
 ησθε 382.
 ησθύμην 83.
 ησί 238.
 ησκηται 418.
 ησμεν 428, 429.

ἦσο 381.
 ἦσσαν 194, 365.
 ἦσται 173.
 ἦστην 428.
 ἡσυχαιτερος 366.
 ἡσχυμένος 418.
 ἦσω 237.
 ἦτουν 386.
 ἦυδα 84.
 ἦξάμην 386.
 ἦυρισκον 386.
 ἦυρον 84, 386.
 ἦϋς 327.
 ἦυχόμεν 386.
 ἦφίει 387.
 ἦχα 418, 423.
 ἦχανεν 144, 213.
 ἦχες 179.
 ἦχῶ 213.
 ἦω 182.
 ἦωθι 359.
 ἦώς 173, 181, 246, 249,
 308.

θάγω 231.
 θαιμός 149.
 θαλάσθας 195.
 θάλασσα 194.
 θάλος 308.
 θάλπω 148, 406.
 θάνατος 114, 115.
 θανοῦμαι 422.
 θαρσεῖν 149.
 θάρσος 199, 307.
 θαρσύνω 102, 200.
 θᾶσσον 310.
 θάσσαν 364.
 θαῦμα 83.
 θεᾶν 181.
 θεθμός 237.
 θειβῆος 82.
 θείη 436.
 θεῖην 236.
 θεῖμεν 236, 436.
 θεῖναι 439.
 θεῖναι 66.
 θεῖναι 142, 223.
 θεῖος 149.
 θεῖς 334.
 θεῖτο 236, 436.
 θέλω 405.
 θέμα 236.
 θέμεναι 439.
 θέμενος 293.
 θέναρ 304.
 θεόγονος 274.
 θεός 75.
 θεράπεινα 331.

θεράπνη 331.
 θεράπων 331.
 θερίζω 195.
 θερμός 142, 144, 148, 293.
 θέρος 142, 148.
 θεροσίτης 102, 198, 364.
 θερσόμενος 431.
 θέρσος 364.
 θές 433.
 θέσθαι 439.
 θέσις 193, 236.
 θεσμός 237.
 θέσσεσθαι 142.
 θέτο 236.
 θετός 148, 236.
 θέω 244.
 Θηβαιγενής 321.
 Θηβαῖος 82.
 θηγάνη 241.
 θήγην 241.
 θήγω 405.
 θήγης 431.
 θήκη 236.
 θηλᾶν 148.
 θήλυς 67, 148 218.
 θῆϊς 241.
 θήομεν 431.
 θηρ 143, 149, 329.
 θηρεῦναι 412.
 θηρόβορος 274.
 θήσομαι 236.
 θήσσα 194.
 θήσω 64, 236.
 θιγγάνω 93, 149.
 θιός 75, 431.
 θλίβω 93, 135.
 θναίσκω 415.
 θνατός 114, 115.
 θνησκω 142, 415.
 θούς 86, 244.
 θοῦ 433.
 Θουκυδίδης 181, 182.
 θράνος 149, 239.
 θράσος 308.
 θράσσα 194.
 θράσσω 194, 200.
 θρασὺς 102, 364.
 θραύνειν 149.
 θραῦν 79.
 θρέξω 199.
 θρέψω 174, 199.
 θρήνυς 149.
 θρόνος 293.
 θρώσκω 415.
 θύγατερ 275.
 θυγατέρεςσι 330.
 θυγατήρ 70, 174, 280.
 θυγατράσι 103.
 θυηφάγος 277.

θύμβρα 154.
 θυμβύρος 274.
 θυμός 94, 149.
 θύνω 416.
 θυοδίκος 277.
 θυσοκόος 127, 414.
 θυσοκοπός 276.
 θύρα 73, 149, 296.
 θύρασι 323.
 θυρέων 181.
 θύρσος 149.
 θύω 97, 149.
 θωρήσσω 194, 410.
 θαῦμα 84.
 θαυμάζω 84.
 ἴα 368.
 ἰάλλειν 140.
 ἰάλλω 100, 101, 104.
 ἰαλτός 100.
 Ἰάνων 181.
 ἰάπτειν 140.
 ἱαρός 173, 178.
 ἱασι 379, 390.
 ἱατρός 299.
 ἱαύεις 407.
 ἱαχή 170.
 ἱαχον 385.
 ἱάχω 399.
 ἱγνύη 75.
 ἰδέ 435.
 ἰδεῖν 93, 148, 169, 245.
 ἰδέσθαι 439.
 ἰδῆτε 432.
 ἰδῖον 96.
 ἰδῖω 96, 97, 175.
 ἰδμεν 196, 229, 245, 374,
 419, 421.
 ἰδμεναι 318, 324, 438.
 ἰδς 170, 174.
 ἰδρις 93.
 ἰδρία 313.
 ἰδρώς 175.
 ἰδρύω 174.
 ἰδρῶ 313.
 ἰδρώς 148, 174, 313.
 ἰδύια 269, 312, 421.
 ἰδωμεν 432.
 ἰδωμι 374.
 ἰεῖη 390.
 ἰεῖην 436.
 ἰεμαι 163, 237, 399.
 ἰέμεν 163.
 ἰέμην 237.
 ἰέναι 439.
 ἰέραξ 173.
 ἰερῆς 327.
 ἱερός 173, 178.

- ἴεσσα 390.
 ἰάνω 416.
 ἰζει 398.
 ἰζω 148, 165, 407.
 ἰήμι 67, 175, 399.
 ἰθαρ 93.
 ἰθαρός 93, 246, 280.
 ἰθι 435.
 ἰκάνω 184, 416.
 ἰκέτευσα 385.
 ἰκετεύω 412.
 ἰκκος 15, 134, 293.
 ἰκόμεσθα 382.
 -ικός 93.
 ἰκτις 75, 392.
 ἰκω 82.
 ἰλάσκομαι 414.
 ἰλλω 399.
 ἰμαλιά 93.
 ἰμάς 172, 305.
 ἰμάσσω 194, 305.
 ἰμάτιον 82, 168.
 ἰμεν 9, 230, 245, 390, 439.
 ἰμονία 305.
 ἰν 75.
 ἰν 93.
 ἰνα 328.
 ἰνες 135, 169.
 ἰξον 426, 428.
 ἰξός 162.
 ἰοίμι 390.
 ἰομεν 432.
 ἰον 93, 169.
 ἰός 93, 165.
 -ιος 93.
 Ἰοῦν 313.
 ἰππεύς 290.
 Ἰππημολγοί 245.
 ἰππικός 294.
 ἰπποι 319.
 ἰπποιο 15, 81, 317.
 ἰπποις 80, 323.
 ἰπποισι 320.
 Ἰππομέδων 173.
 ἰππος 15, 23, 29, 134, 173.
 ἰππότα 321.
 ἰππόται 82.
 ἰππότη 82.
 ἰππου 15, 81, 338.
 ἰππους 18.
 ἰππω 318.
 ἰππων 319.
 ἰπτημι 395.
 ἰρηξ 173.
 ἰς 93, 135, 169.
 ἰσαμεν 422.
 ἰσαιμι 376, 422.
 ἰσαν 422, 428, 429.
 ἰσαντι 422.
 ἰσασι 379, 383, 422.
 ἰσαιτι 422.
 ἰσθι 75, 165, 197, 392, 434.
 ἰσμεν 422.
 ἰσοδαίμων 274.
 ἰσώω 411.
 ἰσταμαι 239, 374, 390.
 ἰσταμεν 228, 230.
 ἰσταμι 63, 389, 399.
 ἰστώναι 239.
 ἰστός 427.
 ἰστασκον 414.
 ἰστασο 433.
 ἰστε 192.
 ἰστημι 228, 239, 375, 376, 398.
 ἰστης 377.
 Ἰστιαίαν 96.
 ἰστίη 75.
 ἰστίον 393.
 ἰστός 393.
 ἰστωρ 93, 169.
 ἰσχάνω 416.
 ἰσχάνα 184.
 ἰσχυρός 294.
 ἰσχύς 294.
 ἰσχω 174, 244, 399, 407.
 ἰταλός 71, 147.
 ἰτε 433.
 ἰτέα 93.
 ἰτός 24.
 ἰτω 24.
 ἰυγή 208.
 ἰφι 135, 320.
 Ἰφίτος 277.
 ἰχθύες 336.
 ἰχθυοίς 294.
 ἰχθύς 75, 197, 294, 326, 334.
 ἰχνος 93.
 ἰώ 390, 432.
 ἰώ 354.
 ἰω 368.
 -ίων 96.
 κα 74.
 καγχός 143.
 καθάλημενος 404.
 κάδος 62.
 κάδω 231.
 καθάρος 275.
 καθαρῶ 429.
 καθαύσαι 86.
 καθέχει 174.
 καθήμην 387.
 καθήσθαι 271.
 κάθηται 271, 284, 393, 422.
 καθίσον 387.
 καθίστα 435.
 καθό 280.
 καί 132.
 καινή 125.
 καίνω 114, 135, 408.
 καίρος 125.
 καίω 81, 84, 247.
 κακίων 365.
 κακός 310.
 κακώω 411.
 κάλαμος 124.
 καλαῦρος 170.
 καλείμενος 404.
 καλεῖν 125.
 καλέσκετο 414.
 καλέσσαι 428.
 καλέσω 114.
 καλέω 61, 411, 430.
 καλήμεναι 404.
 κάλημι 376, 409.
 Καλήσιος 277.
 καλιά 132.
 καλλιρέεθρος 274.
 καλός 125, 184, 310.
 καλύβη 125.
 κάλυξ 125.
 καλυπτω 125, 414.
 καλῶ 431.
 καλῶς 318.
 καμάρα 60, 124.
 κάματος 114.
 καμείται 430.
 καμέτην 380.
 καμόντες 135.
 κάμπτω 125.
 καμών 114.
 κανάζω 62, 126.
 κανδαρός 133.
 κάπετος 124.
 καπνός 61, 124.
 κάπρος 60, 124, 151.
 κάπτειν 60.
 καπύω 61, 124.
 κάρα 132, 302.
 κάρανον 302.
 καρδιά 75, 90, 102, 132, 148.
 κάρσα 171.
 καρῆ 98.
 καρήατα 302.
 κάρηνα 132.
 καρκαίρειν 140.
 καρκίνος 124, 277.
 κάρτασος 153.
 καρπός 124.
 κάρσις 102, 262.
 κάρτα 102.

- κάρταλλος 62.
 κάρταλον 124, 147.
 κάρτος 100, 103, 308, 364.
 κάρυν 125.
 κάρυξ 124.
 κήρχαρος 125.
 κασσύνειν 195.
 κασσύνω 164.
 κάστωρ 125.
 κάσχεθε 195.
 κατά 279.
 καταβραχύ 280.
 καταείνυσαν 402.
 κατακόβος 193.
 κατακονά 245.
 κατάκρης 302.
 καταλείπειτο 385.
 καταπτήτην 396.
 καταύσαι 86.
 κατοικεύων 84.
 κατωτάτω 365.
 καυάξ 250.
 καυλός 79, 295.
 καύμα 247.
 καύσω 247.
 καφάζειν 143.
 καχάζειν 124, 143.
 κε, κεν 74.
 κέαται 20, 95, 112, 382.
 κέατο 383.
 κεδάται 395.
 κείαται 20, 95, 382.
 κείθεν 132.
 κείμαι 20, 79, 95, 133, 393.
 κείνος 132, 358.
 κείρω 81, 98, 99, 100, 103, 124, 128, 140.
 κεκαδμένον 196.
 κέκαδον 133.
 κεκαδόντο 238.
 κεκαδών 238, 407.
 κέκαμαι 196.
 κέκαρμαι 99.
 κεκάσμεθα 196, 422.
 κέκαυμαι 247.
 κεκαφώς 124.
 κεκλείεται 383.
 κέκλετο 407.
 κεκλήγοντες 423.
 κεκληγώτας 312.
 κέκλημαι 420.
 κεκλιάται 383.
 κέκλωμαι 407.
 κέκλωφα 419, 423.
 κέκλωφας 245.
 κέκμηκας 425.
 κεκμηώς 420.
 κεκόμικα 425.
 κεκούρεσμαι 403.
 κεκορημένος 430.
 κεκορυμμένα 196.
 κεκοτῆως 397.
 κεκράγετε 423, 433.
 κέκραχθι 423.
 κεκρύφαται 112.
 κέκτημαι 418.
 κέλεται 245.
 κέλευθος 245.
 κέλης 127, 128.
 κέλωμαι 224.
 κέλσαι 427.
 κeno 179.
 Κενταύρος 108.
 κέντρον 128, 140.
 κέντρων 127.
 κέντωρ 200.
 κέρα 331.
 κεράμβυξ 105.
 κέραμος 66.
 κεράννυμι 75, 250, 401.
 κεραύς 65.
 κέρας 105, 132, 310.
 κερᾶσσαι 114.
 κέραν 395.
 κερδαίνω 410.
 κέρδος 125.
 κερῶν 431.
 κέρκος 140.
 κέρσαι 427.
 κεστός 199.
 κευθάνω 416.
 κεύθει 143.
 κέχανδα 248.
 κεχωρησέμεν 431.
 κεχαρόντο 407.
 κεχολώατο 112.
 κέχυται 244.
 κεχωρίδαται 112, 383.
 κεχωσμένοι 196.
 κῆαι 247.
 κηκίω 96.
 κηλῖς 125.
 κῆνος 132, 358.
 κῆπου 266, 268.
 κηπουρός 157.
 κῆρ 102.
 κηρύσσω 411.
 κῆτος 141.
 κιάται 383.
 κιγῶν 416.
 κίειν 93.
 κῆ 324.
 κίκλησκεν 415.
 κίκος 133.
 Κίλισσα 194.
 κινέω 133, 417.
 κίνυμαι 133.
 κίνυντο 401.
 κίνυνται 401, 417.
 κίρνῃ 396.
 κίρνη 403.
 κίρνημι 75, 250.
 κῖς 294.
 κισσός 194.
 κιχάνω 184, 416.
 κιχείη 436.
 κιχείς 400.
 κιχήμεναι 248, 410.
 κιχῆμι 400.
 κιχῆναι 416.
 κίχρημι 292.
 κῖω 133.
 κλαγγή 124.
 κλαδάρυς 86.
 κλάζειν 61, 124.
 κλαίουσθα 377.
 κλαῖς 63, 247.
 κλαπέντες 245.
 κλάρος 64.
 κλάω 125.
 κλέα 331.
 κλέβδην 193.
 κλείθρον 300.
 κλειτός 81, 179.
 κλείω 179.
 κλέμμα 196.
 κλέος 132, 269.
 Κλεόφρον 275.
 Κλεούφρων 275.
 κλέπτειν 151.
 κλέπτω 90, 245, 249.
 κλέψαι 435.
 κλέψον 435.
 κληῖς 97, 124.
 κλητός 114.
 κλίβανος 211.
 κλίνειν 132.
 κλίνω 94.
 κλίσιον 132.
 κλιτός 94, 132, 303, 326.
 κλονεῖν 125.
 κλόριον 132.
 κλόυς 132.
 κλοπή 245, 249.
 κλύειν 94, 232.
 κλυθῖ 234, 392.
 κλυτόπωλος 273.
 κλυτός 94, 269, 440.
 κλύω 132.
 κλώω 68, 408.
 κλώθω 124, 405.
 κλώψ 249.
 -κματός 114.
 κμῆν 180.
 κνισα 94.

κύβαλος 250.
 κύγχη 133, 142.
 κοῖν 170.
 Κοίρανος 83.
 κοῖω 86, 127.
 κύζμος 160.
 κοίλος 133, 170, 277.
 κοινός 114, 135, 197.
 κοίτη 133, 294.
 κοῖτος 294.
 κόκκυξ 68, 127, 263.
 κύλαβρος 250.
 κολάπτω 126.
 κύλαφος 126.
 κολεκάνος 116, 126.
 κολοκάνος 70, 126.
 κολοσσός 126, 194.
 κολώνη 124.
 κυλανός 67, 295, 302.
 κύμη 125.
 κομττάμενος 195.
 κύνις 127, 324.
 κονίω 96.
 κοντός 127.
 κύος 86, 170.
 κοππατίας 52.
 κύραξ 67, 126, 304.
 κορέει 431.
 κορείεις 430.
 κορέννυμι 185, 401.
 κορέσκει 414.
 κύρζα 75.
 κύρη 126, 416.
 κορκορυγή 140.
 κύρμονς 319.
 κύρος 69.
 κύρρη 185.
 κύρση 116, 126, 198.
 κύρυθι 324.
 κορύσσω 194.
 κορυφούσθαι 412.
 κορώνη 126, 301.
 κορωνίς 68.
 κοσκυλάτια 140, 162.
 κοσμίοντες 431.
 κοτύλη 126.
 κοῦ 15, 126.
 κούλεος 305.
 κουρεύς 199.
 κούρη 126, 185.
 κουρίδιος 126.
 κοῦριξ 126.
 κούρος 69, 96.
 κουφιείς 431.
 κράατα 302.
 κράδη 124.
 κραδία 104.
 κραδίη 102.
 κραιῖω 125.

κράμβος 62.
 κράνα 302.
 κράνος 124.
 κράτα 302.
 κράτεσφι 332.
 κρατήρ 114.
 κράτιστος 105.
 κρατύς 102, 310.
 κρέας 125, 310.
 κρείσσαν 194, 310.
 κρείττων 105, 198.
 κρίμαμαι 395.
 κρεμάννυμι 185.
 κρεμού 431.
 κρεμῶ 430.
 κρείσσαν 102, 310, 364.
 κρηδεμνον 302.
 κρηνη 302.
 Κρησσα 194.
 κρίω 408.
 κρίμα 94.
 κρίνειν 126.
 κρινθέντες 398.
 κρίνω 192.
 κριῶς 132.
 κροκάλη 125, 132.
 κρύκη 125, 132.
 κρύβδην 193.
 κρυόεις 125.
 κρύος 125.
 κρύπτω 414.
 κρύσταλλος 125.
 κρώω 68, 124.
 κταίνω 82, 408.
 κτάμεναι 107.
 κτάμενος 107, 245, 394.
 κτανεῖν 405.
 κτάσθαι 107.
 κτείνω 82, 107, 408.
 κτέννω 184.
 κτενώ 245, 408.
 κτιδέη 392.
 κτίζμα 160.
 κτίζω 124.
 κτίλος 124.
 κτίς 392.
 κυανοχαῖτα 321.
 κύκλος 127, 140, 250.
 Κύκλωψ 211, 306.
 κύκνος 133.
 κύλα 132.
 κύλιξ 125, 127.
 κυλοιδάω 132.
 κύμα 133.
 κυναγός 246.
 κυνέη 302.
 κύνειος 302.
 κυνί 324.
 κυνός 300, 301, 302.

κυνώπα 306.
 κυνώπης 247.
 κύρσαι 427.
 κύων 133, 300, 302.
 κώδεια 126.
 κωλύω 303.
 κῶνος 68, 132, 243.
 κῶρος 69.
 κῶς 126.
 κωφεύω 143.
 κωχεύω 143.
 λαβέ 435.
 λαβεῖν 157.
 λάβεσκον 385.
 λαβίτην 380.
 λαγαρός 238.
 λαγγάζω 61, 250.
 λάγνος 61.
 λαγός 319.
 λαγχάνω 416.
 λαγώ 317.
 λαγών 238.
 Λαδόμας 181.
 λαζύιατο 112.
 λαθεῖν 233.
 λάθετο 240.
 λάθωμαι 230.
 λάθω 231, 233.
 λαιός 79, 97.
 λακεῖν 406.
 λακερός 212.
 λαμβάνω 416.
 λαμπάς 306.
 λαμπρός 152, 294.
 λάμπω 406.
 λανθάνω 416.
 Λαοκῶων 414.
 λάσπερα 211.
 λάπτω 61.
 λᾶς 179.
 λᾶσκειν 140, 251.
 λᾶσκειν 247.
 λαυκανή 102.
 λαφύσσετον 380.
 λαφύσσω 61.
 λᾶινα 331.
 λέγε 269.
 λέγεις 83.
 λέγεσθε 382.
 λέγετε 269.
 λέγης 83.
 λέγοιεν 15.
 λέγομεν 269.
 λέγουσι 193, 269.
 λέγω 66, 156, 231, 245,
 269, 405.

- λείβω 405.
 λείουσι 168.
 λείπειν 156.
 λειπτός 23.
 λείπω 23, 106, 130, 224,
 229, 245.
 λείπων 440.
 λέκτο 199, 425.
 λελαβέσθαι 407.
 λελάβηκα 418.
 έλεαθα 420.
 λελαθέσθαι 240.
 έλεακα 224.
 λελακυία 247.
 λελάσμεθα 196, 422.
 έλεασται 240, 420.
 λελειμμένος 276, 421.
 έλεειπται 420.
 έλεεκται 192.
 έλεηθε 240.
 έλεησθε 382.
 έλελογχα 106, 418, 419.
 λελόγχασι 111, 379.
 έλεοιπα 224, 229, 417.
 έλεοιπας 426.
 έλεοιπε 245.
 λελύκασι 111.
 λελυκώς 334.
 λελυμένος 276.
 λελύσθαι 439.
 έλυται 283.
 λέξατο 425.
 λέξεο 428.
 λέξις 193.
 λέξο 425.
 έπω 244.
 λευγαλέος 127.
 λευκίος 87.
 λεύκιππος 173.
 λευκός 80, 127.
 λευκοφόρος 67.
 λεύσσω 128, 130, 194.
 έλχος 142, 245.
 λέχριος 75.
 έων 66, 156, 331.
 έώς 317.
 λήγειν 238.
 ληγέμεναι 404.
 λήγω 231, 405.
 ληθάνω 416.
 λήθει 240.
 λήθος 308.
 ληνός 296.
 λήξω 238.
 λησει 240.
 λήσομαι 240.
 λητοῦν 313.
 λητώ 334.
 λιθοβόλος 272, 274, 276.
 λικριφίς 75, 140, 320.
 λιλαίομαι 61, 409.
 λιμός 83.
 λιμπάνω 114, 416.
 λινωθῶρής 273.
 λιπαροκρήδεμνος 274.
 λίπος 139.
 λιπούσα 440.
 λιπών 269, 271, 350, 440.
 λίς 325.
 λίσσομαι 194.
 λίτεσθαι 232.
 λίτομαι 405.
 λοβός 140, 153.
 λογγάζω 250.
 λόγε 321.
 λογικός 277.
 λογογράφος 276.
 λόγοις 320.
 λόγον 292.
 λόγος 245, 292.
 λοετρόν 299.
 λοιμός 83, 293.
 λοιπός 245.
 λοξός 73, 156, 162.
 λοπός 244.
 λούκιος 78.
 λούσσω 130.
 λούω 86, 156.
 λοφνίς 130.
 λόχος 245.
 λυγρός 127.
 λύεις 72.
 λυθήσοιμεθα 282.
 λυθήσομαι 8, 429.
 λύθητι 174.
 λύκοις 223.
 λύκος 102, 127, 250.
 λυσανίαι 82.
 λύσασθαι 439.
 λύσεισθαι 439.
 λύσις 193.
 λύσσα 195.
 λυσσάν 195.
 λύχνος 94, 156.
 λύνω 156.
 λωβάσομαι 412.
 λώβη 241.
 μά 64.
 μαδαρός 61.
 μαδών 61, 159.
 μάζα 195.
 μαθήσομαι 397.
 μαίνομαι 408.
 μάκαιρα 197.
 μάκαρ 61.
 μακεδνός 246.
 Μακεδόνες 246.
 μακείν 231.
 μακρός 246.
 μάλα 310, 364.
 μαλακός 159.
 μαλάχη 62.
 μάλβαξ 62.
 μαλθακός 104.
 μάλλον 105, 310, 364.
 μάλον 63.
 μανῆναι 396.
 μανία 158.
 μάννος 250.
 μαντεύομαι 410.
 μαράειναι 61.
 μαρμαίρω 409.
 μόρναο 381.
 μάρνται 403.
 μόρπτις 194.
 μάρτυς 159.
 μάσσω 246.
 μαστίζω 411.
 μάττη 63, 300.
 μάχαιρα 61.
 μαχανά 64.
 μαχέοιτο 383.
 μαχέονται 431.
 μαχήσομαι 430.
 μαχητής 430.
 μάχομαι 61, 231, 405.
 μέγα 302, 331.
 μεγαθύμος 273.
 μεγαλωστί 83.
 μέδιμος 148.
 μέδομαι 148.
 μέδω 249.
 μέδων 195, 310.
 μεθήμην 237.
 μεθίεις 400.
 μέθω 305.
 μεθυμνίος 303.
 μεθίσκω 414.
 μεθύω 303.
 μειδίω 159, 163.
 μείζοντες 311.
 μείζοντες 311.
 μείζω 311.
 μείζων 137, 198, 310.
 μειλίσσω 194, 411.
 μείρομαι 66, 99.
 μείς 183.
 μέλας 251.
 μελεδαίνω 301.
 μελεδών 301.
 μελεδώνη 301.
 μέλι 65, 159.
 μέλισσα 194.
 μέλπω 245.
 μεμάσι 107, 111, 379.

- μεμαθήκασι 379.
 μεμακώς 299.
 μέμαμεν 107, 223, 245, 421.
 μέμαρται 99.
 μέμασαν 107, 428.
 μέματε 107.
 μέματον 107, 419.
 μεμάτω 69, 420.
 μεμανία 107.
 μεμάως 107, 421.
 μεμάως 107, 421.
 μέμβλεται 154, 423.
 μέμβλωκα 154.
 μέμβλωκε 425.
 μεμηκώς 423.
 μεμήχεται 112.
 μέμνηται 381.
 μέμνηται 158, 159, 418, 420.
 μέμνηται 381.
 μέμονα 107, 223, 229, 245, 419, 421.
 μέμονας 107.
 μέμονε 107.
 μεμορπημένος 99.
 μεμόρηται 99.
 μέμυκε 425.
 μέμφομαι 405.
 μενθήραι 107.
 μενοιώνω 181.
 μένος 8, 66, 158, 245.
 μένω 158, 231, 245, 251, 407.
 μέριμνα 159, 249.
 μέριμνα 249.
 μεσαιτερος 366.
 μεσημβρία 99, 154.
 μέσος 65, 194.
 μέσος 159, 194.
 μετά 279.
 μετάλμενος 386.
 μέτρον 237, 250.
 μή 434.
 μήδομαι 405.
 μήδος 249.
 μήκιστος 246, 364.
 μήκος 246, 364.
 μήν 159, 248.
 μήνις 295.
 μηνία 96, 409.
 μήννος 67, 162, 183, 198, 312.
 μηνός 67, 183, 312.
 μήστωρ 249, 297.
 μήστωρ 298, 300.
 μητέρας 329.
 μήτηρ 159, 297.
 μήτι 83.
 μητίετα 321, 333.
 μήτις 194.
 μητράσι 103.
 μητρώκοντος 274.
 μηχανή 304.
 μηχανή 304.
 μήχος 64, 304.
 μία 305.
 μάνθη 397.
 μισημένοι 439.
 μισηται 398.
 μισησομαι 429.
 μίγνυμι 159.
 μινησκαί 415.
 μίνω 223, 245, 399, 407.
 μινύθειν 93.
 μινύθω 407.
 μισγώσαι 160.
 μίσγον 415.
 μισθός 150, 165.
 μισθήμεναι 398.
 μνάσθαι 135.
 μνηστήρισι 330.
 μνησώ 429.
 μοι 356.
 μοίρα 197, 293.
 μοιχός 145.
 μολεῖν 113.
 μόλις 68.
 μολπή 245.
 μόλυβδος 153.
 μόλυβος 213.
 μονή 223, 245.
 μόννος 68, 250.
 μόνος 416.
 μονώ 411.
 μονώνυμ 277.
 μορμύρω 159.
 Μορμύ 335.
 μορυσσω 194.
 Μούσα 158.
 μουσαι 83.
 μουσών 165.
 μόχθηρε 275.
 μοχθηρός 266, 275.
 μόχθος 150.
 μυελός 312.
 μύζω 453.
 μυία 84, 94, 159.
 μυκείν 232.
 μυκτήρ 127.
 μύλη 73, 159, 250.
 μύξα 194.
 μύδος 165.
 μυρίασι 323.
 μύριοι 371.
 μυρίος 277.
 μύς 94, 159, 312.
 μυσί 312.
 μύσθησιν 323.
 μυχοίτατος 365.
 μύω 95.
 μύων 312.
 μύρος 69.
 μύσα 185.
 ναί 78.
 Ναΐας 241.
 νᾶμα 64, 67, 241.
 ναρός 64, 241.
 νᾶσος 64, 241, 319.
 ναύκλαρος 199.
 ναύκλαρος 125.
 ναύς 170.
 ναύς 63, 83, 158, 328.
 ναυσί 329.
 ναυσιάω 411.
 ναύφι 308, 320.
 ναών 181.
 νεανίας 292, 321, 333.
 νέες 183, 329.
 νεΐφει 145, 405.
 νέκταρ 304.
 νέκτι 84.
 νέκτις 66, 133, 294, 326.
 νέκτις 326, 329.
 νέκτισσι 326.
 νέμος 158, 245, 250.
 νέομα 405.
 νέος 87, 158, 170.
 νεοσσός 158.
 νεότατος 63.
 νέποδες 65, 152, 275.
 νεύρον 158.
 νεύω 158.
 νεΐφειν 82.
 νεφέλη 66.
 νέφος 64, 156, 310.
 νεφρός 142, 144, 156.
 νεών 182.
 νεώς 317, 329.
 νέησσι 329.
 νηί 90.
 νηκερδής 116, 158.
 νημα 158, 248.
 νημερτής 364.
 νηός 97.
 νηπίος 140.
 νηπίτιος 140.
 νήσσα 116, 261.
 νηύς 83, 297, 308.
 νηυσί 329.
 νηών 181.
 νίζω 136, 195, 408, 414.
 νικάω 411.
 νίπτρον 136, 408.
 νίπτω 414, 136.
 νίσσομαι 199.

νίφα 142, 145, 158, 234.
 νίφει 82, 234, 405.
 νομεύς 295, 327.
 νομέως 295, 326.
 νομή 245.
 νομήτος 295.
 νομίζω 410.
 νόμος 73, 158, 245, 250.
 νόος 180, 452.
 νοσηνία 182.
 νυκτός 127.
 νύμφα 321.
 νυμφᾶν 306.
 νυμφίος 277.
 νῦν 94, 158.
 νύξ 73, 250.
 νυός 158, 165, 261.
 νῶ 354.
 νῶι 68, 158.
 νῶιν 355.
 νωίτερος 357.
 νωμάω 250.
 νῶν 355.
 νῶννυμος 303.

ξείνος 184.
 ξένος 184, 416.
 ξίφος 200.
 ξυμβλητο 396.
 ξυνιείς 399.

ὀ 357.
 ὀά 166.
 ὀβελός 74.
 ὀβολός 74.
 ὀβρια 250.
 ὀβριμος 197.
 ὀγδός 319, 371.
 ὀγδῶκοντα 182.
 ὀγκάσμαι 73.
 ὀγκος 68, 72, 125.
 ὀγμος 246.
 ὀδάζ 307.
 ὀδε 358.
 ὀδεός 74, 137.
 ὀδί 279.
 Ὀδιδος 277.
 ὀδμή 67, 148, 247.
 ὀδοιπόρος 277, 318.
 ὀδόντες 74.
 ὀδοὺς 148, 330.
 ὀδυνηφάτος 108, 223.
 Ὀδυσεύς 150.
 ὀδωδε 247.
 ὀδωδή 247.
 ὀδών 307, 330.
 ὄζει 247.

ὄζειν 67, 148.
 ὄζη 195.
 ὄζος 165.
 ὄζυξ 172.
 ὄθουμαι 231, 405.
 ὀτ 172, 356.
 ὀττα 223, 229, 419.
 ὀτθε 245, 378.
 ὀτθημι 376, 410.
 ὀττίπους 148.
 ὀττμα 148, 196, 251.
 ὀττει 381.
 ὀττρός 294.
 οἶκε 321.
 οἶκει 301, 306, 318, 340.
 οἰκέομεν 409.
 οἶκοι 301, 318, 343.
 οἰκόνδε 148.
 οἶκος 133, 169.
 οἶκτος 251.
 οἶμος 245, 293.
 οἰνή 80, 158, 368.
 οἶνοπα 306.
 οἶνος 169, 293.
 οἶνοχοείω 413.
 οἶνοχός 244.
 οἶσμαι 85.
 οἰσπύλος 127.
 οἶός 348.
 οἰσπύς 85.
 οἶς 85, 251, 324, 325.
 οἶσετε 428.
 οἶσθα 377, 422.
 ὀκτάκις 367.
 ὀκταλλος 128.
 ὀκνος 133.
 ὀκτώ 67, 267, 370.
 ὀκτώ 368.
 ὀλβιοεργός 276.
 ὀλβος 157.
 ὀλείζαν 105, 137, 195, 310, 364.
 ὀλείται 247, 430.
 ὀλέκειν 247.
 ὀλέσσαι 428, 430.
 ὀλετήρ 247, 430.
 ὀλιβρός 153.
 ὀλίγιςτος 364.
 ὀλίγος 105, 197, 310.
 ὀλισθάνω 196, 212, 416.
 ὀλλυμι 67, 401.
 ὀλολύζειν 73.
 ὀλοιστρέχος 318.
 ὀλος 68, 164, 416.
 Ὀλυμπίασι 323.
 ὀλώ 430.
 ὀλωλα 418.
 ὀλωλε 247.
 ὀλώλεκα 424.

ὄμαλος 368.
 ὀμαρτήτην 404.
 ὀμαίται 430.
 ὀμχέω 143.
 ὀμχλή 145.
 ὀμμα 68, 129, 196, 247.
 ὀμνυε 435.
 ὀμνυθι 392, 435.
 ὀμνυμι 248, 401.
 ὀμνύουσι 396.
 ὀμοιος 266, 368.
 ὀμοίος 277.
 ὀμοιούω 411.
 ὀμοκλή 292.
 ὀμόργνυμι 138.
 ὀμός 368.
 ὀμότιμος 275.
 ὀμοτός 430.
 ὀμοῦμαι 248, 430.
 ὀμπνη 250.
 ὀμφαλός 68, 73, 156.
 ὀμφαξ 145.
 ὀμώμοκε 248.
 ὄναρ 75.
 ὄνομα 91, 106, 110, 250, 280, 302, 330, 331.
 ὄνομαι 395.
 ὄνομαίνω 303.
 ὄνομακλυτός III, 303.
 ὄνόμασι 304.
 ὄνόματα 110, 303.
 ὄνοματοθέτης 303.
 ὄνοματος 303.
 ὄνος 71.
 ὄνοτος 68.
 ὄντα 305.
 ὄντος 305.
 ὄνυξ 72, 250, 306.
 ὄνυχος 143.
 ὄπαδους 129.
 ὄπατρος 172.
 ὄπατων 68.
 ὄπη 129, 247.
 ὄπισσιν 83.
 ὄπι 324.
 ὄπλέω 411.
 ὄπλίξω 411.
 ὄποι 318.
 ὄποσος 194.
 ὄπου 359.
 ὄπατα 196.
 ὄπηρ 247.
 ὄπω 318.
 ὄπατα 129, 247.
 ὄπωπῃ 247.
 ὄπως 357, 359.
 ὄράω 157, 169, 247.
 ὄργανον 244.
 ὄργη 116.

ὄργια 266, 312.
 ὀρέγω 66, 138.
 ὄρεσι 165.
 ὄρημι 409.
 ὀρθός 116.
 ὀρθίω 411.
 ὀρίννω 416.
 ὀρίνω 416.
 ὄρμενος 247.
 ὀρμιόμενοι 431.
 ὀρνίθες 143.
 ὄρνις 294.
 ὄρνιχες 143.
 ὄρνυθι 401.
 ὄρνυμι 67, 157.
 ὄρνύς 271.
 ὄρνυται 247.
 ὄρομαι 405.
 ὄρονται 247.
 ὄρώ 181.
 ὀροφή 196, 244.
 ὀροφος 196, 244.
 ὄρρανος 185.
 ὄρρος 157, 185, 198.
 ὄρρωδέω 75.
 ὄρρας 199.
 ὄρseo 428.
 ὄρσο 247.
 ὄρτιρ 160.
 ὄρυγμός 157.
 ὄρύσσω 194.
 Ὀρχομενός 276.
 ὄρφανός 68, 156.
 ὄρωρε 247.
 ὀρώρειν 247.
 ὀρωρέχεται 112, 423.
 ὄς 95, 173, 356, 358.
 ὄσμη 196.
 ὄσος 194, 359.
 ὄσσα 128, 129, 194, 293.
 ὄσσάκις 367.
 ὄσσε 128, 129, 194, 247, 351.
 ὄσσεισθαι 247.
 ὄσσομαι 129.
 ὄστα 181.
 ὄστακος 304.
 ὄστέον 68, 277.
 ὄτέ 280.
 ὄτι 128, 357.
 οὐ 172, 355.
 οὐάι 166.
 οὐατος 183.
 οὐθαρ 103, 149, 303.
 οὐθατος 303.
 οὐκί 200, 359.
 οὐλε 305.
 οὐλόμενος 247.
 οὐλος 116, 164, 185, 293.

οὐρά 198.
 οὐράν 412.
 οὐρος 185, 247, 412.
 οὐς 86, 304.
 οὐτα 394.
 οὐτάμενος 394.
 οὔτε 285.
 οὔτοσί 279, 338.
 οὔτω 83.
 οὔτωσί 93, 200, 318.
 οὐχί 200.
 ὄφελος 68.
 ὄφθαλμός 128.
 ὄψις 145.
 ὄφρυνος 278.
 ὄφρυνς 156, 294.
 ὄχομαι 244.
 ὄχτω 413.
 ὄχλος 214.
 ὄχνη 71.
 ὄχος 67, 143, 244, 308.
 ὄψ 129, 169, 244.
 ὄφέ 214.
 ὄφεται 247.
 ὄψις 247.
 ὄφομαι 68, 128, 129.
 ὠάγνυμι 64.
 ὠθεῖν 152.
 ὠθος 307.
 ὠιδεῖν 412.
 παιδίον 277.
 παιδογόνος 274.
 παῖδων 272.
 παῖς 179.
 παῖσδεις 195.
 παῖφάσσω 409.
 παῖω 81, 84.
 παλαιότερος 318, 365.
 παλαιφάτος 240, 321.
 παλάμη 61, 70, 150, 302.
 Παλαμήδης 200.
 παλεόργα 160.
 πάλη 62.
 πάλλα 150.
 πάλλω 101, 150.
 πάλτο 426, 427.
 παμβώτης 194, 243.
 παμμήτωρ 297.
 παμφαῖνω 409.
 πᾶν 306.
 πανδημί 301, 318, 340, 343.
 πανία 241.
 πανύς 296.
 πάντων 272.
 πορά 60, 113, 150, 322.
 παραβεβασμένος 398.
 παραβλάψ 249.

παραί 79, 150, 279.
 παράσχοιμεν 437.
 παράσχοιμι 437.
 παρῆσσομαι 98.
 παρείαν 391.
 παρείμεν 436.
 παρέσχον 385.
 παρόνιος 145, 277.
 παρίσδω 165.
 παρίσσω 381.
 παρίστασι 381.
 πάρος 113.
 πάσα 64, 184, 194.
 πάσσομαι 194.
 πάσσαν 194, 365.
 πάσχω 248, 397, 415.
 πατάνη 152.
 πατάρ 64.
 πατάσσω 140.
 πατέομαι 241.
 πάτερ 275.
 πατέρα 299, 300.
 πατέρες 300.
 πατέρι 300, 324.
 πατέρος 300.
 πατήρ 64, 70, 150, 275, 297, 299, 300, 329, 334.
 πάτος 109, 163.
 πατράσι 98, 103, 278, 329.
 πατρί 103, 299, 300.
 πάτριος 178, 272, 293.
 πατρίου 272.
 πατροκτόνος 245, 276.
 πατρός 299, 301.
 πάτρω 313.
 παῦρος 79.
 παῦω 79, 150.
 παφλάζω 123.
 πάχνη 150.
 παχυλός 275, 280, 294.
 παχύς 73, 108, 145, 296.
 πεδᾶ 322, 341.
 πέδη 65, 148, 150.
 πέδοι 318.
 πέδον 148, 152.
 πέζυς 66.
 πέϊ 318.
 πέθειν 80, 155.
 πέθω 57, 89, 225, 245.
 πείθω 249, 313.
 πείθων 228.
 πείνην 180.
 πείραρ 151, 303.
 πείρατος 303.
 πείρω 151.
 πείρω 98, 151.
 πειρώω 112.
 πείσις 193.
 πείσσω 196, 256.

πείσομαι 90, 106.
 πειστήρ 298.
 πεπτεῖν 152, 413.
 Πελαζγικόν 160.
 πελάζω 75.
 πέλας 101.
 πελάσσαι 114.
 πελάω 250.
 πελιός 150.
 πέλλα 65, 150, 296.
 πελλός 219.
 πέλομαι 57, 90, 130, 250.
 Πελοπόννησος 199.
 πελώ 431.
 πεμπάζω 369.
 πεμπάς 129, 369.
 πέμπε 129, 369.
 πέμπτος 23, 129, 369.
 πέμπω 245.
 πέμψωμεν 432.
 πένης 153.
 πενθέα 181.
 πενθερός 66, 156, 256.
 πενήθμεναι 404.
 πένθος 90, 106.
 πίνομαι 245.
 πινάκις 367.
 πεντακόσιοι 367.
 πένταρχα 367.
 πέντε 73, 129, 267, 369.
 πενήθκοντα 199, 239, 272, 369.
 πεντηκοστός 199.
 πεπαυῖα 108, 420.
 πέπαμαι 152.
 πεπαρμένος 419.
 πέπασθε 108, 419.
 πεπάσμη 196.
 πέπεισται 192, 420.
 πεπέτασμαι 403.
 πεπιθόμεν 407.
 πέπλεχα 423.
 πεπληγμέν 423.
 πέπληγον 240.
 πεπληγνῖα 421.
 πέποιθα 229.
 πεποίημεν 421.
 πέποιθας 374.
 πεποίησι 379.
 πέποιθε 245.
 πεποιοῦμεν 431.
 πεπολιτευκῶρ 160.
 πέπομφα 245, 423.
 πέπονθα 108, 419.
 πεπονθώς 420.
 πέποσθε 108.
 πίπτοι 243.
 πέπραχα 421.
 πεπραμένη 152.

πέπταμαι 403.
 πεπτηῶτες 396.
 πεπτός 129.
 πέπτω 414.
 πεπυθόατο 407.
 πεπυκαδόμενον 196.
 πέπυσθε 382.
 πέπυσμαι 196, 421, 422.
 πέπωκα 151, 243.
 περαιτέρος 366.
 πέρας 103.
 περάσσαι 114.
 περάω 151.
 πέρι 279.
 περιδύμεθον 383.
 Περικλέα 181.
 περιπλόμενος 405.
 πέρκη 152.
 περνάς 403.
 πέρνημι 151.
 πέρσαι 199.
 Περσέφαττα 109.
 πεσέονται 431.
 πέσσυρες 250.
 πέσσω 128, 129, 194, 244, 414.
 πέταλος 71.
 πετάννυμι 75, 250, 401.
 πέτεται 227.
 πέτομαι 57, 65, 147, 150, 223, 244, 250, 395.
 πεύθεται 227, 230.
 πεύθομαι 228.
 πεύσομαι 429.
 πεφάνθαι 439.
 πέφανθε 382.
 πέφονται 107.
 πεφάσθαι 107.
 πέφαται 107, 223, 245, 419.
 πέφηνγα 419.
 πεφήναι 111, 379.
 πεφήσεται 199, 392.
 πεφιδέσθαι 407.
 πέφνω 407.
 πεφοβήατο 112.
 πέφραδε 407.
 πεφραδμένα 196.
 πεφράσθαι 424.
 πεφύασι 417.
 πεφυγμένος 419, 420.
 πεφύκασι 379.
 πεφύως 271.
 πῆ, πῆ 358.
 πήγνυμι 241, 401.
 πήκτο 425.
 πήλε 426, 427.
 πηλίκος 277.
 πηλός 152.

πῆλυ 83.
 πήνη 152, 184.
 πῆται 425.
 πήχεις 336.
 πιάλος 304.
 πῆαρ 303, 304, 331.
 παρός 303.
 πῆδαξ 152.
 πιδύω 152.
 πείρα 275.
 πῆεις 272.
 πῆέσθαι 245.
 πῆθι 243.
 πῆθων 228.
 πῆλναμαι 75, 250.
 πῆλναι 403.
 πῆλνός 219.
 πῆλος 151.
 πῆμπλαμεν 100, 228, 400.
 πῆμπλανεταί 416.
 πῆμπλημι 67, 100, 151, 228.
 πῆμπλησι 398.
 πῆμπραμεν 100.
 πῆμπρασι 400.
 πῆμπρημι 100, 400.
 πῆνος 152.
 πῆνυτός 199.
 πῆνω 243.
 πῆομαι 243, 432.
 πῆος 304.
 πῆίσκω 243.
 πῆπος 152.
 πῆπράσκω 151.
 πῆπτα 147, 150, 244, 399, 407.
 πῆσος 152.
 πῆσσα 152, 194.
 πῆστεύω 412.
 πῆστις 193.
 πῆσυρες 250, 369.
 πῆσω 243.
 πῆθος 195.
 πῆτνα 400.
 πῆτνάω 403.
 πῆτνημι 75, 152, 250, 403.
 πῆτνω 114.
 πῆτυς 152.
 πῆφανσκε 415.
 πῆφρῖναι 100.
 πῆφρημι 400.
 πῆων 94, 304.
 πῆαγ 63.
 πῆάγιος 152.
 πῆάγιος 152.
 πῆάζω 195.
 πῆάθουσι 100, 400.
 πῆακούς 152.
 πῆαξ 62.

πτήσω 194.
 πτοίω 86, 152.
 πτόλεμος 195.
 πτόλις 195.
 πτύρος 99, 245.
 πτύρεσθαι 151, 447.
 πτώσω 194, 408.
 πτώω 94, 151, 195, 199.
 πτώσω 194.
 πυγμή 150, 293.
 πυγάν 150.
 πυθμήν 94, 155, 193, 196.
 πυθοίαιτο 112.
 πύθομαι 150.
 πύθω 95.
 πυκνός 150, 301.
 πυλέων 181.
 Πυλοειγής 318.
 πύματος 76, 365.
 πυνθάνομαι 416.
 πύξ 150, 213.
 πυξός 153.
 πύς 150.
 πύρ 94, 150.
 πύστις 193.
 πυστός 192.
 πῶ 69.
 πωλέομαι 250.
 πωλλέω 129, 150.
 πῶμα 68, 243.
 πῶνων 68, 151, 243.
 πῶς 129, 357, 358.
 πῶς 249, 350.
 πωτάομαι 250.
 πῶν 152, 243.

ρηγάς 238.
 ράδαμος 115.
 ράδιξ 64, 157.
 ραίνω 197, 199.
 ράνα 330.
 ράπτω 212.
 ρᾶστος 183.
 ρέγχω 405.
 ρέζω 137, 195, 408.
 ρέπω 157, 212.
 ρέω 84, 244, 405.
 ρήγμα 238.
 ρηγμός 294.
 ρήγνυμι 224, 238.
 ρηγνύσι 401.
 ρήγνεις 330.
 ρήξω 238.
 ρήτωρ 248.
 ριγεδανός 411.
 ρίγος 93.
 ρίζα 157, 195, 306.

ρίπτασκον 414.
 ρύδον 68.
 ρύος 244.
 ροπτός 192.
 ροφέω 156, 212.
 ρύζω 453.
 ρυήναι 396.
 ρυήσομαι 396.
 ρωγαλέος 238.
 ρώννυμι 69, 401, 403.
 ρώξ 238.
 ρώομαι 84.
 ρωχμός 238.

σᾶ 182.
 σάειν 240.
 σακεσφόρος 277.
 σακοφόρος 277.
 σαλεύειν 60.
 σαλεύω 164.
 σάλος 170.
 σαμφύρας 53.
 σαπῆναι 396.
 σαπρός 60.
 σαυτὸν 356.
 σανχμὸν 79.
 σαφείς 179.
 σᾶντερος 250.
 σβίννυμι 165, 402.
 σβήσομαι 429.
 σεαυτὸν 356.
 σέβας 141, 164.
 σείβομαι 171.
 σείο 355.
 σειρά 66, 164, 170.
 σεμνός 141, 164, 293, 440.
 σέο 355.
 σεπτός 171.
 σεσαρνία 240.
 σεσαρῶς 240.
 σεσεισμένος 196.
 σεύω 171.
 σεαυτοῦ 84.
 σήπω 405.
 σθένος 392.
 σθίνω 392.
 σιγῆν 180.
 σιός 75.
 σκαίος 79, 97.
 σκαίρω 101, 124, 408.
 σκάλοψ 126, 203.
 σκάνδαλον 126.
 σκαπάνιον 64.
 σκάπτειν 162.
 σκάπτρον 163.
 σκάπτω 124, 413.
 σκεδάννυμι 250.
 σκελετός 114.

σέκπτεσθαι 244.
 σέκπτομαι 200, 249, 414.
 σκεπτός 235.
 σκερρὸν 101.
 σκήπαν 64.
 σκιά 124.
 σκίδναται 403.
 σκίδνημι 75, 250.
 σκιρτάω 101.
 σκίφος 200.
 σκληρός 114.
 σκληρότηρ 160.
 σκολιός 126.
 σκοπός 244.
 σκοπέω 249.
 σκύλον 203.
 σκύτος 94, 124, 127, 162.
 σκῶρ 203.
 σκῶψ 249.
 σμερνός 104, 163, 212.
 σμήν 180, 212.
 σμύρνη 218.
 σοβέω 141, 164, 413.
 σοέω 413.
 σοί 356.
 σός 250.
 σός 356.
 σοῦ 355.
 σοφός 272.
 σοφοῦ 272.
 σοφώτατος 365.
 σοφώτερος 318.
 σόω 250.
 σπάλαξ 126, 203.
 σπαράσσω 126, 140.
 σπαρνός 163, 203.
 σπάρτον 100, 151.
 σπαρτός 100.
 σπεῖρα 100.
 σπεῖρω 99, 100, 103.
 σπένδω 163, 459.
 σπέρχω 143, 405.
 σπῆσθαι 244.
 σπεύδω 203, 245.
 σπινθήρ 203.
 σπλάγχνον 144, 302.
 σπλήν 144, 302.
 σπουδή 245.
 σπυρίς 151.
 στάζω 408.
 σταῖν 239.
 στάλα 183.
 σταλέντες 245.
 σταλῆναι 222.
 στάλλα 183.
 στάλλεις 102.
 στάς 334.
 στάσις 193.
 στατήρ 239.

- στατός 70, 162, 235, 239, 294.
 σταυρός 79.
 στῆατος 183.
 στέγει 65.
 στεγνός 440.
 στέγος 197.
 στείβω 203.
 στείχω 142, 231, 245.
 στέλλω 98, 99, 222, 408.
 στελῶ 245.
 στερίσκω 415.
 στέωμεν 394.
 στήθεσφι 165.
 στήλη 183, 239.
 στήμων 239.
 στήναι 439.
 στήμεν 183, 431.
 Στησαμένους 276.
 στήσω 239, 429.
 στίγμα 141.
 στίγημι 213.
 στίζειν 163.
 στίζω 408.
 στικτός 93.
 στιλβός 277.
 στίφος 163.
 στίχειν 232.
 στίχος 245.
 στίχω 406.
 στλεγγίς 163, 203.
 στοῦχος 245.
 στολή 222, 245.
 στόλος 245.
 στόνος 67, 163, 203.
 στορέννυμι 401.
 στόρνυμι 68, 183, 203.
 στορνύσα 401.
 στραβός 277.
 στραγγός 163.
 στρατός 75, 115, 163, 234, 235.
 στρατόφι 320.
 στράφω 74.
 στρέφω 74, 250.
 στροταγίω 75.
 στρόφος 250.
 Στρυμών 94.
 στρωμένη 293.
 στρώννυμι 401.
 στρωτός 115, 163, 183, 234, 415.
 στραφάω 250.
 στυγείν 232.
 στύγιος 440.
 στυγνός 440.
 στύραξ 73.
 στύω 235.
 σύ 146, 354.
 συμβόσιον 243.
 συμβώτης 242.
 συί 84.
 συλήτην 409.
 συλλογή 245.
 σύμφερε 271.
 συναντήτην 409.
 σύνδετος 237.
 συνέαν 380, 436.
 συνειλεχώς 420.
 σύριγξ 157, 164.
 σὺς 94.
 σύστασις 199.
 σύστημα 239.
 σύτο 394.
 σφάζω 195, 408.
 σφάλλω 101, 205.
 σφάζω 408.
 σφάς 355.
 σφάττω 408, 414.
 σφέ 355.
 σφέα 356.
 σφέας 281, 355.
 σφείς 355.
 σφέων 355.
 σφενδόνη 73, 205.
 σφόγγος 205.
 σφέτερος 280, 357, 366.
 σφέων 281.
 σφί, σφίν 354.
 σφίσι 281, 355.
 σφίσιν 354.
 σφοδρός 294.
 σφός 357.
 σφωί 355.
 σφωίν 355.
 σφωίν 355.
 σφωίτερος 357.
 σφών 355.
 σχάζω 126.
 σχεῖν 244.
 σχές 433.
 σχίζα 195.
 σχίζω 148, 163.
 σχοῖην 437.
 σχοίμεν 437.
 σωζομένους 276.
 σώθητι 193.
 Σωκράτης 275.
 Σωκράτη 20.
 Σωκράτην 20, 308.
 Σωκράτης 275.
 σῶος 250.
 σωρός 223, 240.
 σώτειρα 312.
 σώτερ 297, 298.
 σωτήρος 297.
 σάφρονος 109.
 σάφρων 109.
 τά 319.
 τάθη 398.
 ταί 357.
 τακείς 146.
 τακερός 241.
 τακῆται 396.
 τάκω 405.
 τάλαντον 146.
 τάλας 98, 146.
 ταλαύρινος 96, 170.
 ταμείν 405.
 ταμίαις 323.
 ταναός 146.
 τανυ- 106.
 τανύπτερος 296.
 τάνυται 108, 401.
 τανύω 430.
 τάρβος 136, 146.
 τάρπημεν 397.
 ταρπώμεθα 98, 99.
 τάρφθεν 398.
 τās 64.
 τās 181.
 τāsίς 108.
 τάσσω 408.
 τατός 92, 108, 146, 225, 245.
 ταῦρος 79, 146, 198.
 ταυρομέταπος 273.
 ταφεῖν 231.
 ταχύς 307, 310, 364.
 τᾶων 339, 357.
 τε 58, 65, 110, 118, 128.
 τέγγειν 141.
 τέγγω 146.
 τέγος 65, 197.
 τεθαλυῖα 421.
 τεθαύμακα 425.
 τεθάφαται 383.
 τίθεικα 417.
 τίθεκα 424.
 τεθηλώς 421.
 τίθητι 199.
 τεθλασμένους 196.
 τεθμός 237.
 τίθηκα 422.
 τεθνόμεν 439.
 τεθνάται 439.
 τεθνάσι 422.
 τεθνεώτες 183.
 τίθηκα 418.
 τεθνήξω 431.
 τεθνηώς 181.
 τεθραμμαι 99, 419, 421.
 τεθωγμένους 241.
 τεῖδε 340.
 τείν 355, 356.
 τείνω 107, 146, 223, 225.
 τείον 358.

τείρεα 65, 310.
 τείρω 65, 146, 408.
 τείχη 181.
 τείχος 245.
 τεῖω 82, 129.
 τέκμαρ 304.
 τέκνον 125, 257, 293.
 τέκταίνα 114, 301.
 τεκταίνω 197, 410.
 τέκτονος 301.
 τέκτω 330.
 τέκτων 125, 301.
 τελαμών 70.
 τελέσσαι 428.
 τελεσφόρος 276.
 τελευτάω 412.
 τελέω 430.
 τέλλω 127, 129.
 τέλος 146.
 τέλσον 128, 198.
 τελῶ 431.
 τέμαχος 114.
 τέμενες 308.
 τέμνω 223, 245.
 τενῶ 245, 429.
 τέο 127, 129, 358.
 τεοῖο 360.
 τέοισι 358.
 τέος 170, 356, 361.
 τέρας 310.
 τέρεα 310.
 τέρεμνος 404.
 τέρετρον 114.
 τέρμα 146, 302, 350.
 τέρμων 65, 146.
 -τερο- 66.
 τερπικέρανος 124, 130.
 τέρεσθαι 146, 217.
 τεροσήμεναι 397, 404.
 τέρομαι 104.
 τέρφος 142.
 τέσσαρες 251, 257, 336.
 τέσσερες 369.
 τεταγών 62, 146, 284, 407.
 τέταμαι 419.
 τετάρπετο 99, 407.
 τέταρτος 280, 369.
 τέταται 107, 245, 420.
 τετάφαται 112.
 τετάχεται 112, 382.
 τέταχθε 423, 424.
 τετελεσμένος 196, 422.
 τετεύχεται 112, 379.
 τετιημένος 128.
 τετιγώς 128, 397.
 τέτλαθι 392, 420.
 τέτλαμεν 421.
 τετληνία 421.
 τέτοκα 244.

τετόκαμεν 422.
 τέτορες 128, 129, 369.
 τετραμμένος 245.
 τετράριος 275.
 τέτρατος 98, 369.
 τετράφαται 112, 382.
 τετράφατο 423.
 τέτραχμον 200.
 τέτρηται 248.
 τετρηχυία 421.
 τετριγυία 312.
 τετριγύστας 312.
 τετρίφεται 112, 423.
 τετρίφθαι 423.
 τέτριφθε 423, 424.
 τέτροφα 245, 396, 419.
 τέτρωκται 243.
 τέττορες 369.
 τετυγμένος 421.
 τετύκοντο 407.
 τετύχθαι 439.
 τευχесφόρος 277
 τευχοφόρος 277.
 τέψ 358.
 τέων 358.
 τηγανον 241.
 τηθή 149.
 τηθίς 149.
 τηκεδάν 241.
 τηκεῖν 146.
 τηκω 241, 405.
 τημερον 164.
 τημός 146.
 τηνα 171.
 τηνεί 318.
 τηνίκα 277.
 τηνῶν 357.
 τηήτες 164.
 τί 357.
 τιθέασι 379.
 τιθέαται 383.
 τίθει 435.
 τιθεῖ 400.
 τιθείην 436.
 τιθεῖμεν 436.
 τιθείς 399.
 τιθείς 199, 330.
 τιθείσα 306.
 τιθείσι 379, 399.
 τίθεμαι 236.
 τίθεμεν 100, 230, 236, 399.
 τιθέναι 439.
 τίθεντι 399.
 τίθεσθαι 439.
 τίθεσο 433.
 τιθέω 395.
 τιθήμεναι 400, 410.
 τιθήμενος 400, 410.
 τιθήμι 148, 236, 398.

τιθήνη 67, 148.
 τίθησι 193.
 τίκτω 200, 244, 407.
 τιμᾶν 408.
 τίμας 18.
 τιμάσρος 179.
 τιμᾶν 95, 409.
 τιμῶ 97.
 τιμᾶν 437.
 τιμῶμεν 180.
 τιμῶμεν 437.
 τιμωρός 179.
 τίν 355.
 τίνα 359.
 τινά 280.
 τινές 280.
 τινί 269, 280.
 τινοῖν 281.
 τινύμεναι 401, 416.
 τίνω 416.
 τινῶν 269.
 τινων 281.
 τίς 118, 128, 129, 264.
 τίς 264.
 Τισαμενός 276.
 τίσειαν 380.
 τίσι 281.
 τιταίνω 409.
 τιτθή 149.
 τιτρώσκω 415.
 τιτύσκειτο 415.
 τιτύσκομαι 415, 420.
 τίω 82.
 τλατός 114, 146.
 τλήθι 392.
 τό 146, 357.
 τοί 80, 357.
 τοῖ 318.
 τοῖρ 160.
 τοῖς 81.
 τοῖσδεσσι 357.
 τοῖχος 245.
 τόκος 244.
 τολμή 302.
 τομή 223, 245.
 τόμος 245.
 τονή 245.
 τόνος 67, 223, 245.
 τόνος 69, 81, 185.
 τορεῖν 113.
 τούσος 359.
 τοὺς 69, 81, 185.
 τουτεί 318, 340.
 τοῦτο 358.
 τουτῶν 357.
 τραγαλέον 167.
 τράγημα 243.
 τράπεζα 129, 199, 369.
 τραπέσθαι 245.

- τράπουσι 74.
 τράφε 98.
 τράφεν 74.
 τράφη 98.
 τριβῆναι 398.
 τράχω 74.
 τρέ 167.
 τρεῖς 81, 146, 367.
 τρέμω 65, 146, 231.
 τρέπω 57, 74, 124, 130, 245, 249.
 τρέφειν 74.
 τρέφειν 437.
 τρέχω 74, 249.
 τρώ 146, 405.
 τρῆς 369.
 τρητός 114.
 τριάκοντα 336, 370.
 τριακοστός 370.
 τριάς 112, 372.
 τρίβω 192.
 τριήρης 251, 308.
 τρίμμα 196.
 τριοπίς 129.
 τριοττίς 128, 129.
 τρίπος 306.
 τρίπους 280.
 τρίς 372.
 τρισί 278.
 τριστοιχί 324.
 τρίτατος 365, 371.
 τρίτος 146, 365.
 τριχάκις 133.
 τριχός 193.
 τρόπαιον 266.
 τροπέω 245, 413.
 τροπή 245.
 τρόπος 57, 245, 249.
 τροχός 249, 264.
 τρόχος 264.
 τρυφάλεια 369.
 τρύω 146.
 τρώγω 243.
 Τρωίλος 275.
 τρώγονται 243.
 τρωπάω 249.
 τρωχάω 249.
 Τρώων 272.
 τυ 146, 354.
 τυγχάνω 416.
 τυδῆ 181.
 Τύδης 327.
 τυθήτι 199.
 τυθε 83.
 τύμβος 94, 146.
 τυμβοχοή 274.
 τύνη 354, 359.
 τύπνυνται 29.
 τύπνυνται 165.
 τύπνυνται 165.
 τύπνω 413.
 τύρβη 142, 146, 153.
 Τυχίος 277.
 τύχωμι 374.
 τῷδε 316, 318.
 τῶν 180.
 -τωρ 69.
 τῶς 69, 146, 185.
 ὑάκινθος 303.
 ὑάλη 168.
 ὑβρίω 411.
 ὑβρις 136.
 ὑγια 181.
 ὑγιῆ 181.
 ὑγιής 136, 169.
 ὑγρός 149.
 ὑδαρός 303.
 ὕδωρ 304.
 ὕδρα 148.
 ὕδωρ 148, 173, 303, 331.
 ὕει 172.
 ὕεσις 168.
 ὕμεῖς 95, 173.
 ὕμειον 355.
 ὕμναιον 385.
 ὕμετερος 280, 356.
 ὕμνη 173.
 ὕμνη 355.
 ὕμνη 355.
 ὕμνη 354.
 ὕμνη 95.
 ὕμνη 355.
 ὕμνη 355.
 ὕμνη 356.
 ὕμνος 280.
 ὕμνῶμεν 76.
 ὕμνος 356.
 ὕμνων 354.
 ὕμνος, ὕμνη 214.
 ὕμνη 279.
 ὑπάρχουσιν 185.
 ὑπαρχώσας 185.
 ὑπατος 365.
 ὑπέρ 94, 151.
 ὑπέρ 94, 151, 173, 279.
 ὑπερβασαν 380, 393.
 ὑπερδία 331.
 ὑπερετίθεα 376.
 ὑπερθυμος 273.
 ὑπερος 279.
 ὑπέρτερος 365.
 ὑπερφύλιος 233, 235.
 ὑπηρέτης 277.
 ὑπηρέτης 273.
 ὕπνος 60, 151.
 ὕπνῳ 411.
 ὑπό 94, 173, 278.
 ὑπόβρυχα 76.
 ὑποδάμνασαι 381.
 ὑπόδρα 98, 102, 275.
 ὑπολαβών 271.
 ὑπώροφος 277.
 ὕραξ 164, 170.
 ὕς 94, 163.
 ὕσδος 165.
 ὕσμινη 95, 173.
 ὕστερος 173.
 φαγεῖν 231.
 φαγῶν 64.
 φάεα 168.
 φαείνός 184, 198, 402.
 φαιή 436.
 φαῖμεν 436.
 φαίνω 197, 392, 408.
 φάκελος 156.
 φαλίξει 143.
 φάμα 63.
 φαμέν 239, 270.
 φάμενος 239.
 φαμενός 276.
 φάμι 156.
 φάνεσκε 414.
 φανήσομαι 396.
 φάος 156.
 φάρειν 74.
 φάρυγξ 213.
 φάσθαι 239.
 φασί 165, 270.
 φάσις 165.
 φάσκον 414.
 φάσκω 414.
 φάσσα 128, 130.
 φάτε 270.
 φάτις 240.
 φάτω 434.
 φαῦλος 277.
 φάψ 130.
 φέβομαι 244.
 φείδομαι 405.
 φέρε 433.
 φέρε 376.
 φέρειν 74.
 φέρεῖς 377.
 φερέμεν 404.
 φέρεν 439.
 φέρεσαι 17.
 φέρεσθαι 439.
 φέρεσθε 382, 436.
 φερέσθαι 436.
 φερέσθαι 436.
 φερέσθαι 436.
 φέρεται 382.
 φέρετε 433, 435.

φέρετον 433.
 φέρετρον 70.
 φερέτω 433, 436.
 φερέτωσαν 433.
 φέρη 381.
 φέρης 376.
 φέρητε 432.
 φέροιεν 438.
 φέροισι 376, 437.
 φέροντα 305.
 φέρονται 382.
 φέροντι 67, 379.
 φέροντος 305.
 φερόντων 433.
 φέρτε 449.
 φέρτος 100.
 φέρτρον 70.
 φέρω 57, 65, 156, 231, 244,
 375, 404.
 φέρωμεν 432.
 φέρων 271, 331, 335.
 φέρονται 432.
 φέρωσι 432.
 φεύγεσκε 414.
 φεύγω 89, 224, 231, 245.
 φευξομαι 430.
 φηγός 156.
 φήμη 239.
 φῆμι 270.
 φῆμι 239, 269, 392.
 Φῆμος 277.
 φῆμις 239.
 φῆρ 143.
 φῆς 269, 270.
 φησί 193.
 φθαίρω 82, 101, 408.
 φθάμενος 394.
 φθάνω 184, 416, 421.
 φθαρῆναι 245.
 φθαρτός 100.
 φθέγγομαι 405.
 φθείρω 99, 197, 408.
 φθέρω 184.
 φθερώ 245, 429.
 φθινύθω 416.
 φθίνω 416.
 φθορά 245.
 φθύρος 245.
 φιλαίτερος 366.
 φιλεῖ 288.
 φιλείην 409, 437.
 φίλεις 409.
 φίλεισι 404.
 φιλέω 95, 97, 409.
 φίλημεν 410.
 φιλήμενος 404, 409.
 φίλημι 404, 409.
 φιλήναι 410.
 φίληται 410.

φιλοίην 437.
 φιλοῖμεν 437.
 φιλομειδής 163.
 φιλώ 179, 182.
 φιλωμεν 182.
 φιλῶν 97, 235.
 φιλαδεῖν 231.
 φλέγος 304.
 φλέψ 145, 154.
 φλίβω 136.
 φλόξ 306.
 φλύκταινα 154.
 φλύω 154.
 φοβέω 413.
 φόβος 244.
 φοῖβος 277.
 φοίνισσα 194.
 φοιτᾶν 180.
 φοιτήτην 409, 410.
 φονέα 181.
 φόνος 142, 223, 245.
 φορβή 142.
 φορέω 104, 244, 306, 413.
 φορηῆναι 409, 410.
 φόρος 57, 249, 272.
 φορός 272.
 φράζω 195, 411.
 φράξω 408.
 φρασί 109, 301, 330.
 φράσσω 62, 139, 155, 408,
 411.
 φράττηρ 63, 147, 156, 297,
 300.
 φρέαρ 66, 303.
 φρέατος 303.
 φρέιατα 303.
 φρενός 109, 298.
 φρεσί 109, 301, 330.
 φρήν 109, 297, 330.
 φρίσσω 194.
 φρύνη 156.
 φῦ 385.
 φυγεῖν 156.
 φυγή 94, 134.
 φύξα 195.
 φυῖω 97.
 φύλαξ 306.
 φυλάσσω 194.
 Φύλης 327.
 φύλλον 73, 155.
 φυλόπιδα 325.
 φύλοπιν 325.
 φύμα 233, 234.
 φύναι 155.
 φύομεν 97.
 φύσεως 326.
 φύσιος 326.
 φύσις 233, 235.
 φύω 73.

φάγω 231.
 φωνή 420.
 φῶρ 69, 73, 156, 249, 305.
 φῶς 180.
 χαῖνω 144.
 χαίρω 101.
 χάλαζα 62, 70, 195.
 χαλέπτω 413.
 χαλκόπους 273.
 χαμαῖς 165, 321.
 χαμαί 71, 114, 143, 288,
 321.
 χαμαιτετής 277.
 χαμός 63.
 χάν 312.
 χανδάνω 106, 142, 148, 248,
 416.
 χαρά 101.
 χαρίεις 334.
 χαρίεσσα 194.
 χαριέστερος 199.
 χαρίζομαι 410.
 χάρις 101.
 χαρμονή 293.
 χάσκω 414, 428.
 χάσαστο 428.
 χέξω 195.
 χείλιοι 83.
 χεῖμάν 143, 144.
 χεῖρ 144, 305, 329.
 χείρως 199.
 χείσομαι 106, 248.
 χέλλιοι 184, 198.
 χερείτερος 305.
 χερείων 365.
 χέρνιβα 136, 408, 414.
 χέρσος 104, 199.
 χέω 84, 145, 244, 432.
 χήλιοι 184.
 χῆν 144, 332.
 χηνός 184.
 χῆρ 305.
 χθαμαλός 144, 275, 305,
 368.
 χθές 66.
 χθάν 144, 368.
 χίλιοι 83, 371.
 χιών 143, 368.
 χλαῖνα 135.
 χλαμῖς 135.
 χλύη 64, 143, 144.
 χλωρός 144, 212.
 χοή 244.
 χολός 113.
 χολή 144.
 χολῶω 411.
 χορδή 143, 144.

- χόρτος 143.
 χρᾶσθαι 64.
 χρεμίζω 144.
 χρῆ 292.
 χρηῖσκομαι 415.
 χρῆν 385.
 χρῆσθα 396.
 χρῆσθαι 64.
 χρίω 144.
 χρούα 182.
 χρώματος 217.
 χρώμος 144.
 χρυσᾶ 181.
 χρύσεος 97.
 χρυσίοισιν 320.
 χρυσίον 277.
 χρυσόθρονος 273.
 χρυσοπέδιλος 273.
 χρυσόω 409.
 χύμενος 394.
 χύτο 106, 394.
 χῶμαι 84.
 χώρα 321, 322.
 χώραι 322, 336.
 χώραν 321.
 χώρας 321, 338.
- χαρίον 277.
 χαρίω 180.
 ψάλτρια 298, 312.
 ψάματος 201.
 ψάρ 201.
 ψέγω 244.
 ψευδάγγελος 274.
 ψευδής 308.
 ψεύδος 308.
 ψῆν 180.
 ψῆσσα 194.
 ψηφισμα 160.
 ψιθυρός 199.
 ψηλαφᾶν 201.
 ψηλός 201.
 ψιλίω 455.
 ψύγος 244.
 ψυθίζω 199.
 ψύλλα 201.
 ᾧ 69, 318.
 ᾧδε 69, 318, 369.
 ᾧθέω 243.
 αἰγνυτο 387.
 ᾧκησα 386, 428.
- ὤκειλα 199, 427.
 ὠκύς 68, 241, 296.
 ὠλένη 70, 73, 248, 302.
 ὠλήν 302.
 ὠλλόν 302.
 ὠμος 71.
 ὠμός 241.
 ὠμοσα 430.
 ὠμότερος 365.
 ὠν 350.
 ὠνος 213.
 ὠνώμενος 181.
 ὠόν 68.
 ὠπα 306.
 ὠρα 247.
 ὠρα 95.
 ὠρανός 185.
 ὠρορε 247.
 ὠρτο 247, 386, 425.
 ὠς 356, 358.
 ὠτα 165.
 ὠτός 182, 304.
 αὐτός 84.
 ἀφέλεια 83.
 ἀφέλεια 83.
 ὠψ 247, 346.

II.

INDEX OF LATIN WORDS.

(References to pages.)

ab 60, 153, 246.
 abdo 208.
 abicio 188.
 abiectus 73.
 abies 61, 153, 334.
 abiētē 97.
 abietis 190.
 ablui 187.
 abnuo 187, 189.
 abolere 67.
 abruptio 213.
 absens 109, 350, 448.
 absenti 344.
 abstergo 192.
 ac 139.
 accipio 209.
 accuso 189.
 acer 304.
 acerbus 192.
 acerrimus 192.
 acervus 211.
 Achaei 157, 188.
 Achivi 157, 188.
 acies 60.
 acinus 71.
 acquiro 209.
 acritas 192.
 actum 205.
 acui 467.
 acula 139.
 acupediis 241, 296.
 acus -eris 211.
 acus 60, 296.
 ad 150, 441.
 adagium 144, 238, 293.
 addo 446.
 adeitur 80.
 adeps 150.
 adesus 207.
 adfatim 451.
 adigo 63.
 adolescens 190.
 adoleasco 251.

ador 149.
 adorea 149.
 advenat 454.
 adventi (gen.) 349.
 adulescens 190.
 aecus 131.
 aedes 79, 149, 309, 334.
 aeger 251.
 aegrotus 455.
 Aegyptus 55.
 aemidus 148, 213, 251.
 Aeneas 83.
 aeneus 213.
 aenus 185.
 aequiparo 191.
 aequor 304.
 aequus 79.
 aeris 185.
 aes 185.
 Aesculapius 71.
 aestas 79, 149, 208, 246.
 aestimo 79, 210.
 aestus 149, 208.
 aetate 85.
 aevum 79, 97.
 affligere 93.
 agedum 361.
 agellus 219.
 ager 60, 246, 294, 335.
 agere 472.
 agi 472.
 agilis 246.
 agimini 67.
 agmen 186.
 agna 61, 143.
 agnitus 452.
 agnus 61, 88, 136, 141.
 ago 60, 138, 231, 233, 246, 450.
 agrestis 60, 71.
 Agrigentum 314.
 agros 219.
 agrum 294.

aheneus 176.
 aide 85.
 aidilis 85.
 aio 85, 144, 176, 213, 238.
 airid 341.
 ala 61, 133, 214.
 alacer 72, 157.
 alacritas 192.
 alapa 72.
 albare 412.
 albere 412, 455.
 albus 61, 156.
 alcedo 62, 173.
 Alcumenas 345.
 Alemonia 302.
 Aleria 220.
 ali (gen.) 363.
 alias 345.
 alicubi 362.
 alienus 293.
 alimentum 302, 473.
 alimonium 302, 473.
 aliqui 80.
 alis 293.
 alius 61, 91, 293, 361.
 alius 362.
 alnus 219.
 alo 62, 231, 251, 450.
 altaria 220.
 alter 361, 366.
 alternas 345.
 alternei 343.
 alumnus 62, 302, 473.
 alveolus 191.
 ama 471.
 amandus 216, 474.
 amant 442.
 amarus 241.
 amassem 462.
 amassim 462.
 amasso 462.
 amat 442.
 amatus 465.

- amavere 466.
 amaverunt 466.
 amavi 465.
 amavimus 466.
 ames 185.
 ambages 246.
 ambesus 217.
 ambi 93, 156.
 ambo 156, 318, 332.
 ambobus 342.
 ambulacrum 220.
 ambulare 220.
 amentum 151, 213.
 amicare 453.
 amicus 467.
 annis 301.
 amo 97, 454.
 Amsanctus 217.
 amtermini 217.
 amurca 73.
 annas 116, 258.
 anceps 313.
 ancilla 61.
 aucipes 313.
 anclare 147.
 ancora 157.
 ancus 61, 257.
 ango 61, 143, 452.
 anguifer 304.
 anguilla 145, 305.
 anguis 142.
 angulus 61.
 anhelo 191.
 Anienicola 304.
 animus 61, 70, 158, 293.
 annona 215.
 annuo 187.
 annus 215.
 anser 144, 176.
 ante 60, 147, 257.
 antedhac 344.
 antennae 215.
 antestamino 444.
 antestari 221.
 antiae 257.
 anticus 208.
 antidea 208, 344.
 antioper 219.
 antiquos 295.
 annis 349.
 aper 250.
 aperui 467.
 apica 192.
 apis 138.
 apiscor 151, 453.
 apor 150.
 appellamino 444.
 aptus 61, 151, 173, 250.
 aqua 130, 139.
 aquila 61, 124, 140.
 aquilo 61, 124, 140.
 aquilus 140.
 aranea 62, 157, 215.
 arare 455.
 aratrum 147, 220, 294, 300.
 arbiter 31, 150.
 arbor 161.
 arbori 340.
 arboris 308, 350.
 arbos 308, 309.
 arceo 61, 125.
 arcesso 31, 150.
 arctus 207.
 arcus 139.
 ardea 157, 251.
 ardesco 453.
 ardor 210.
 arduus 116, 293.
 are 469, 472.
 arebo 469.
 arena 157.
 areo 450.
 arfuerunt 31, 150.
 argentum 61, 138.
 Argeus 157.
 Argivus 157.
 argutus 61.
 aridus 210.
 aries 251.
 armentum 157.
 armiger 304.
 armus 62, 116, 157.
 aro 61, 157.
 arquatus 141.
 arquitenens 139.
 ars 219.
 arsi 217.
 artus 62, 157.
 arvorsus 31.
 arvum 157.
 arx 61, 219, 250.
 as 211.
 ascia 60, 162.
 asinus 71.
 aspernari 446.
 asporto 209, 214.
 assecla 139.
 Atho 314.
 atque 139.
 attia 147.
 attigi 457.
 aucupo 72.
 audeire 87.
 audiem 470.
 audin 284, 286.
 audio 97, 185, 210, 454.
 augeo 169.
 aula 86, 215.
 aureae 86.
 aureum (gen.) 338.
 aureus 97.
 auriga 86, 340.
 auris 86, 187, 261.
 aurora 165, 246, 310, 406.
 aurum 86.
 ausculto 210.
 ausculum 86.
 auspicor 188.
 auster 210.
 austium 86.
 autem 79.
 autumnus 302.
 autumo 85.
 auxilium 162.
 auxilla 215.
 avena 88, 141, 187, 251.
 aveo 61.
 avilla 88, 141, 187, 251.
 avibus 342.
 avis 85, 187, 406.
 avunculus 189, 190.
 axilla 61, 214.
 axis 61, 133, 162.
 babulus 154.
 baculum 62, 147, 153.
 balare 154.
 balbus 62, 154.
 balneum 284.
 bellum 155, 211.
 bene 73, 189.
 Beneventos 341.
 benignus 73.
 betere 155, 239, 451.
 bibi 455.
 bibo 153, 243, 450.
 bicorpor 309.
 biduum 296, 347.
 bifarium 372.
 biga 368.
 bimestris 217.
 bimus 144, 155, 185, 211.
 bini 372.
 biplex 155.
 bis 155, 192, 211, 372.
 blaterare 154, 220.
 boare 97, 136.
 bobus 89, 187, 296, 348.
 boere 97, 136, 155.
 bonus 155, 189.
 bos 136, 155, 221, 296, 348.
 boum 348.
 boves 88, 187.
 bovis 348.

bovis 97, 170, 187, 296.
brachium 154, 211.
brevis 87, 109, 145, 176.
Bruges 153.
brochus 154.
bruma 366.
brutus 154.
bubo 154.
bubulcus 154, 187.
bubulus 154.
bubus 89, 187.
buca 206.
bucca 206.
buccina 154.
bufo 154.
bulba 137, 221.
bullio 454.
Burrus 153.
buxum 153.

caccare 62.
cacumen 213.
cachinnus 124, 143, 216.
cadamitas 150.
cadaver 133, 473.
cadus 62.
cado 133, 191, 231, 238.
caedo 203, 450.
caelicola 289.
caelum 220.
caementum 213.
caeruleus 220.
caesaries 125, 190.
caesius 165.
caesus 207.
calamitas 71, 133.
calamitosus 221.
calamus 124.
calare 61, 125, 455.
calcar 313.
calcare 313, 335.
calcaria 295, 313.
calculus 125, 132.
calidus 210.
calificacio 472.
calidus 210.
caligo 125, 249.
calix 125, 211.
calumnia 303.
calvus 218, 305.
calx 125, 132.
Camaena 132, 209.
camillus 132.
Campans 313.
Campanus 313.
campus 125.
camurus 60, 124.
cancer 124.

candelabrum 220.
candidus 133.
canere 467.
canis 133, 211, 302.
cano 62, 126, 231, 241, 450.
cante 449.
cantus 467.
canui 467.
canus 213.
caper 60, 124, 151.
capere 60.
capeso 445, 462, 464.
capis 454.
capisterium 203.
capit 454.
capitodium 150.
capitulum 220.
captivus 293.
capulum 220.
carbasus 153.
carbo 62.
cardo 116, 124.
carina 125.
carmen 124, 132, 161.
Carmena 161.
carnis (nom.) 314.
carnis 301.
caro 302.
carpo 124.
cartilago 61.
carus 296.
Casca 213.
cascus 213.
Casmena 132.
casmillus 132.
cassia 62.
cassus 133.
castus 133, 208.
catapulta 190.
catinus 126.
catus 86, 132, 236, 243, 446.
cauda 86, 126.
caudex 86.
caulis 79, 133, 295.
caupo 86.
caussa 165.
cautes 86, 132.
cautus 86.
cavea 190.
caveo 86, 127, 187, 202, 460.
cavilla 250.
cavus 86, 133, 170, 188.
-ce 146.
cecidit 190, 455, 456, 459.
cecidimus 456.
cecini 455, 459.
cædo 133, 238, 450.

cædo 132.
cedre 449.
ceivis 79.
celere 132, 249.
celeber 72.
celebris 214.
celer 127, 128, 190.
cella 132.
-cello, 219, 451.
celox 127.
cena 202, 214.
censento 472.
censor 207, 208.
censum, 207.
cento 127.
centum 106, 132, 147, 370.
centuplus 368.
centussis 367.
cepi 459, 460.
cerebrum 132, 214, 220.
Cererus 337.
Ceres 125, 335, 452.
cerno 126, 192, 202, 451, 465.
cernuus 214, 217, 302.
certissimus 367.
certus 192.
cervix 132.
cervus 65, 132.
cessus 206.
ceteri 132.
cette 449.
ceu 87.
Chiron 83.
ciconia 133, 241.
ciere 94, 133.
-cii 465.
cillo 451.
cincinnus 216.
cinis 127.
cis 132.
citimus 366.
cito 341.
citra 132.
citus 465.
civi 465.
civicus 294.
civis 79, 133.
civitatum 338.
clades 126.
clam 132.
clamos 161.
clango 61, 124.
clarare 412.
clarere 412.
Claudius 86.
claudicat 86.
claudio 63, 124, 186, 247, 450.

- claudus 86.
 clausi 462.
 claustrum 188, 208, 300.
 Clausurus 207.
 clava 126.
 clavis 63, 97, 124, 247.
 clepi 460.
 clepinus 457, 459.
 clepo 151, 460.
 Clitumnus 94, 132, 303.
 clivus 94, 132.
 clodicat 86.
 Clodius 85, 86.
 cluere 94, 132.
 clunis 132.
 clupeus 125.
 coactus 186.
 coagito 186.
 coagulum 186, 246.
 coalesco 186.
 coclites 211.
 cocus 140.
 coda 86, 188.
 codex 86.
 Coelius 88.
 coepi 88, 186.
 coëpi, 88, 186, 457, 460.
 coerare 88, 128, 131.
 coetus 88.
 cognitus 284.
 cognomen 212, 303, 452.
 cognomenta 110, 303.
 cognomentum 190.
 cohors 143, 251.
 cohū 188.
 coinquo 130, 140, 211.
 coirare 128.
 collēgimus 464.
 colligo 66, 191.
 collis 67, 124, 219, 295, 302.
 collum 216.
 colo 128, 129, 140, 189.
 color 132.
 coluber 140, 191.
 column 71, 302.
 columna 71, 293, 302, 303.
 colurnus 218.
 coma 126.
 comestus 207.
 (com-)mentus 91.
 communis 262.
 compages 233.
 comperire 453.
 compes 148.
 compos 295.
 concido 345.
 conciliabulum 220.
 concors 219.
 concludo 87, 187.
 conclusus 79.
 concubina 306.
 concupisco 453.
 concussus 207.
 condemno 191.
 condumno 191.
 confero 191.
 conficio 218, 284.
 confluges 145.
 conflui 145.
 confutare 187.
 congius 133, 142.
 congruo 97, 154.
 conicio 135.
 conjunx 219.
 conjux 291.
 conqueisivi 85.
 conquexi 140.
 conquinisco 140.
 conscendo 191.
 consentes 448.
 consensio 191.
 consevi 465.
 consitus 465.
 consobrinus 212.
 consternare 151, 201, 445.
 consul 149, 186.
 consularis 220.
 contamino 62, 213.
 contingit 63, 191.
 contremisco 453.
 contubernium 191.
 contus 140.
 conviciū 67.
 copa 86, 185, 263.
 copia 185, 263.
 copo 86.
 coquina 221.
 coquo 128, 129, 140, 221.
 cor 91, 104, 132, 211, 335.
 corium 113.
 Corneli 293.
 Cornelius 293.
 Cornelia 293.
 Cornelius 293.
 cornigerum 294.
 cornix 126, 301, 303.
 cornū 218, 296, 332.
 cornua 105, 132.
 cornus 124, 218.
 corona 68, 126.
 corpulentus 202, 335.
 coruscus 202.
 corvus 67, 126.
 cos 68, 243.
 cōtes 86, 188.
 cottidie 340, 362.
 coxa 68, 140.
 coxi 140.
 cracentes 70, 116, 126.
 crates 62, 115, 124, 147.
 creare 125.
 credebam 441.
 creditus 236.
 credo 148, 208.
 cremare 66.
 crepare 450.
 cresco 452.
 crevi 465.
 cribrum 202.
 crimen 94, 192.
 crocio 68, 124, 140.
 crudelis 125.
 crudus 125.
 cruentus 125.
 cruor 125.
 -cubi 458.
 cucullus 132.
 cucurri 455, 459.
 cudi 459.
 cui 131, 363.
 cujum 363.
 cujus 131, 362.
 culina 214.
 culleus 305.
 culmen 71, 302.
 culmus 124.
 culter 126.
 cultus 140.
 culullus 125.
 cum 131, 135.
 cum (prep.), 114.
 cumulus 133.
 cunae 133.
 cunctari 133.
 cuneus 132.
 -cunque 73.
 cupa 206.
 cupio 454.
 cuppa 206.
 cur 131.
 curare 128.
 curro 140, 207.
 currum (gen.), 338.
 cursus 207.
 curtus 103, 124, 140, 203.
 custodio 454.
 custos 208.
 cutis 133, 202.
 da 471
 dacruma 60, 67, 147.
 damnum 60, 147, 215.
 dāmus 446.
 danunt 242, 451.

- dapes 60, 147.
 daphne 71.
 dare 147, 472.
 darem 470.
 dās 446.
 dāsī 472.
 date 433.
 datio 242.
 dator 242, 298, 300, 335, 473.
 datorem 297, 298.
 daturus 69, 473.
 datus 70, 236, 242, 446, 473.
 dautia 150.
 deabus 342.
 debilitari 221.
 decoris 190.
 decem 65, 110, 147, 257, 370.
 decemvir 304.
 decet 73, 148, 452.
 decidi 457.
 decimus 110, 371, 372.
 decor 302, 309.
 decōris 309.
 decōris 309.
 decus 302, 309.
 decrevit 87.
 decunx 368.
 decuplus 368.
 dedēt 469.
 dedi 242, 455, 468.
 dedimus 242, 458.
 defensor 207.
 defensus 207, 208.
 defetigo 191.
 defrudo 79, 189.
 defrutum 154.
 degener 308, 335.
 dego 186.
 deguno 214, 451.
 dehorire 86.
 deico 79.
 delenire 191.
 deleo 101, 148.
 delinimentum 191.
 delinio 67.
 delinire 191.
 delirare 262.
 delubrum 220.
 demus 470.
 deni 368.
 dens 148, 307, 448.
 denso 455.
 densus 109, 147, 296.
 dentio 221.
 denuo 88, 187, 388.
 depecisci 191.
 depuvio 189.
 desivare 164.
 deum 344.
 deus 188.
 dexter 65, 148, 162, 294.
 dextera 294.
 dextimus 367.
 dicis 147.
 dico 79, 133, 147.
 dictare 445.
 dictitare 445, 464.
 didici 455.
 didiciti 458.
 die (gen.) 338.
 diei 186.
 diēquarti 340.
 diequinte (i) 340.
 dies 219, 293, 296, 336, 347.
 dies (gen.) 338.
 Diespiter 95, 296, 340, 347.
 difficilis 211.
 dignus 73, 186.
 digressus 211.
 dii 338.
 diluvium 189.
 dimus 155, 372.
 dingua 73, 149.
 dirimo 161.
 Dis 296, 347.
 disciplinae 71.
 disco 148, 209, 450, 452.
 dismota 132.
 dispenno 216.
 distenno 216.
 distineo 161.
 ditiesco 453.
 diu 347.
 diurnus 161.
 diutinus 347.
 diuturnus 336.
 divello 211.
 divergo 211.
 divido 449, 450.
 divisimus 464.
 divus 147, 188.
 dixē 462, 464.
 dixem 462, 464.
 dixero 463.
 dixi 460, 462.
 dixim 462, 463, 464.
 dixissem 463.
 dixisti 463.
 dixo 462, 463, 464.
 dixti 463.
 dixtis 463.
 docent 442.
 doceo 250, 452.
 docere 467.
 doctrina 300, 306.
 doctus 467.
 docui 467.
 dolabra 220.
 doleo 101.
 dolus 148.
 domare 147, 251, 467.
 domi 340, 343.
 dominōrum 339.
 dominus 71.
 domitor 310.
 domitus 70, 467.
 domui 467.
 domuis 349.
 domus 67, 148, 313.
 donare 147, 242.
 donec 335.
 donicum 361.
 donum 68, 147, 242, 293.
 dormio 104, 147, 217.
 dos 242, 295.
 Dossennus 216.
 douco 450.
 drachuma 71.
 drubius 372.
 duceui 368.
 ducenteni 368.
 ducentessimus 372.
 ducesimus 372.
 ducis 148, 346.
 duco 148, 186, 257.
 duellum 155.
 duim 470.
 dulcis 157, 296.
 duo 95, 332, 368.
 duobus 342.
 duonus 155, 189.
 duplēs 155, 335, 367.
 duplex 367.
 dusmo 132.
 duumvirum 339.
 dux 346.
 ea 361.
 eboris 304.
 ebur 304.
 eceum 361.
 ecfocient 54.
 ecus 131, 139.
 edere 65.
 edi 457.
 ēdim 448, 470.
 ēdimus 67, 249.
 edo 148.
 eei 361.
 eeis 362.

- efficio 191.
 egestas 207.
 egi 457, 459, 460.
 ego 359.
 ei 361.
 ei 361.
 eiei 361.
 elementum 72.
 elephantus 72.
 elicio 467.
 elicitus 467.
 elicui 467.
 elixus 139.
 emem 361.
 emi 457, 467.
 endo 148.
 enectus 467.
 enim 360.
 enos 360.
 ens 448.
 ensis 109, 162.
 eo 97, 446.
 equa 188.
 equabus 342.
 equestris 208.
 equi 81, 188, 344.
 equidem 360.
 equinus 293.
 equiria 140, 459.
 equis 80, 341, 344.
 equo (abl.) 343.
 equus 72, 75, 121, 134, 293.
 eram 223, 447.
 ero 66, 447, 461, 469.
 erus 294.
 ervum 157.
 ës 207, 433, 444, 447, 449.
 ës 433, 444, 448, 449.
 esca 148.
 escit 448.
 esquilie 140, 189.
 esse 472.
 esse (ed) 448.
 est 65, 162, 207.
 ës 448.
 ës 433.
 ës 433.
 estis 447.
 ës 448.
 esurio 445.
 et 441.
 Etruria 217.
 eum (gen. plur.) 363.
 euntis 446, 473.
 evenat 454.
 ex 162.
 examen 213, 246.
 exanclare 214.
 excello 127.
 excuso 87.
 exemplaris 223.
 eximius 440.
 exosus 247.
 expavi 465.
 expergiscor 453.
 explodo 86.
 exsanguis 304.
 exsero 104.
 exsertus 467.
 exsternare 151, 201, 446.
 exta 210.
 exterus 366.
 extimus 366.
 extremus 366.
 fabrum 344.
 fabrum (gen.) 338.
 fabula 240.
 fac 237.
 facesso 462, 464.
 facilitas 192.
 facillimus 367.
 facilumed 318, 341, 344.
 facio 148.
 facultas 192.
 fagus 64, 158.
 fallo 205, 451.
 falx 219.
 fama 63, 240.
 fame (gen.) 338.
 familia 149.
 familias (gen.) 338.
 famini 471.
 famino 444, 471.
 famis 338.
 famul 335.
 famulus 149.
 far 219.
 farcio 139, 155, 453.
 fari 63, 156, 240, 445.
 fariolus 143, 144.
 farreus 216.
 fas 308.
 fascia 155.
 fascino 154.
 fascis 155.
 fastigium 217, 251.
 fastus 149.
 fatalis 220.
 fateor 240, 451.
 fatigamüs 442.
 fatiscor 451.
 fatum 240.
 fauces 86.
 faustus 86.
 faveo 86, 188, 460.
 favi 460, 465.
 favilla 189.
 favissa 189.
 favonius 189.
 favus 189.
 fax 156, 251.
 faxim 463.
 faxo 463.
 faxseis 80.
 februis 214.
 feci 459, 460.
 fecimus 457.
 fefelli 455.
 feido 405, 450.
 felare 67, 148.
 felis 149, 218.
 felix 149.
 fellis 301.
 femen 304, 352.
 femella 304.
 femina 67, 148.
 feminis 352.
 feminoris 304.
 femor 304.
 femoris 304.
 femur 149, 304, 350, 352.
 femuris 352.
 -fendere 66, 142, 450.
 fer 433, 449.
 fers 149.
 ferät 469.
 ferem 470.
 feremus 470.
 ferentia 307.
 ferentium 307.
 feretrum 220.
 fero 65, 69, 156, 231.
 ferre 216, 449, 472.
 ferrugo 216.
 fers 444, 449.
 fert 219, 444, 448.
 ferte 433, 449.
 fertis 448.
 ferto 449.
 ferus 143, 144.
 fertuca 251.
 festus 214.
 fervere 66, 450.
 ferveo 148.
 fibula 208.
 fictus 207.
 fidei 186.
 fides 93, 297, 310.
 fidi 458.
 fidicen 389.
 fidimus 456.
 fido 80, 155.

fidus 88.
 fidustus 310.
 fiere 472.
 fieri 472.
 fieri 472.
 figo 93, 141, 208, 450.
 filius 67, 191.
 filum 213.
 findo 452.
 fingere 419.
 finio 454, 455.
 finis 215.
 finitimus 367.
 finiunt 442.
 fio 97, 149.
 firmus 293.
 fiasus 206, 207.
 fivere 141.
 fixus 207.
 flagro 220.
 flagrum 220.
 flamen 213, 465.
 flamma 213.
 flaveo 450, 455.
 flavi 465.
 flecto 451.
 fletus 465.
 flevi 465.
 flexantes 473.
 fligo 136, 450.
 floccus 208.
 floreus 450.
 flos 309.
 fluctus 349.
 fluere 145, 154, 187.
 fluvius 145, 187, 293.
 focale 86.
 focus 156, 251.
 fodi 459.
 fodio 68, 247, 454.
 foedus 88.
 folium 73, 155.
 follis 211.
 folus 143, 144.
 fomes 189.
 foras 296.
 forbea 142.
 foretis 217.
 foretus 217.
 fore 73, 449.
 forem 149, 470.
 fores 73, 211, 295.
 foris 296.
 Formiæ 148.
 formido 210.
 formosus 294.
 formus 142, 144, 148, 293.
 fornax 148.
 fortis 104, 217.

fossa 68, 247.
 fossus 205, 206.
 fatus 465.
 fovea 186, 189.
 foveo 188, 189, 460.
 fovi 460.
 fractus 115.
 fragare 220.
 fragrare 220.
 fragrum 212.
 frater 63, 147, 157, 300.
 fraus 79, 149, 189.
 fregi 459, 460.
 fremo 144, 155.
 frenum 149, 239.
 frequens 139.
 fretum 154, 168.
 fretus 149.
 frendo 144, 217, 450.
 frigedo 210.
 frigeo 449.
 frigidus 210.
 frigus 93, 212.
 frio 144.
 fritillus 154.
 frons 156, 219.
 fructi (gen.) 349.
 fruges 141.
 frui 141.
 frumino 444.
 frumen 213.
 frunisci 141, 451.
 frustra 86, 149, 189, 208, 341.
 frutex 154.
 fudi 459.
 fuero 462, 463.
 fuēt 469.
 fuga 94.
 fugi 459, 460.
 fugio 134, 156, 454, 460.
 fuisse 155.
 fuit 467.
 fulcrum 220.
 fulgera 304.
 fulgere 450.
 fulgur 304.
 fulgura 304.
 fulguris 190.
 fullo 301.
 fulsi 217.
 fumus 94, 149.
 functus 217.
 funda 73, 205.
 fundo 145, 189.
 fundus 94, 155, 215.
 funebria 212, 214.
 funeris 161.
 funestus 161.

fungor 452.
 fungus 73, 205.
 fur 69, 73, 156, 249, 305.
 furere 449, 450.
 furnus 105, 142, 144, 218.
 furvus 156, 161, 211.
 fuscus 161, 211.
 fustis 149, 210, 217.
 futilis 145.
 futuo 235.
 fuvimus 97.

Gaius 188.
 Galatea 83.
 Galba 136.
 gannire 134, 216.
 garrare 63.
 gaudere 79, 138, 149, 186, 246.
 gavisus 79, 149, 186, 246.
 gelu 190, 296, 313.
 gelum 313.
 gelus 313.
 gemella 304.
 geminus 134, 138, 304.
 gemisco 453.
 gemma 219.
 gena 65, 135.
 gener 218.
 genere 450, 467.
 generis 65, 165, 308.
 genetivus 467.
 genetrix 191, 467.
 genitor 70, 191.
 genitus 191, 467.
 genu 138, 296, 332.
 genua 97.
 genui 467.
 genus 64, 72, 134, 308.
 germen 136, 217.
 germiniseca 304.
 gero 161.
 gēssimus 207, 464.
 gesto 141, 162.
 gestus 161, 207.
 gigno 134, 135, 450.
 gilvus 305.
 glans 62, 136, 141.
 glareas 63.
 glisco 452.
 globus 136, 141, 213.
 glocio 68.
 gloctorare 124, 140.
 glomus 136.
 gloria 132.
 glos 70, 138.
 glubo 95, 156, 450.

gluma 213.
glutire 206.
glutire 206.
Gnaeus 188.
Gnaivod 69, 85, 318.
Gnaivos 188.
gnascor 452.
gnatus 135.
gnavus 452.
gnosco 68, 137, 452.
Gracchus 70.
gracilis 70, 126, 132.
gradibus 191.
gradior 454.
gradu 349.
gradubus 191.
gradui 349.
gradus 296.
grallae 215.
grandis 141.
grando 62, 70, 195.
granum 115.
gratulari 220.
gratus 101, 115.
gravis 97, 104, 113, 135,
187, 296.
gremium 141.
gressus 206.
grex 135.
grundire 216.
grunnire 216.
grus 296.
gula 114.
gungrum 73.
gurdus 141.
gurgis 135.
gustare 247.
gustus 138, 214.

habet 442.
habuero 462.
habuisse 463.
hac 361.
hae 345.
hamus 63.
hara 251.
harena 176.
hariolus 143, 144.
harum 362.
haruspex 113, 176.
hasta 86, 208.
haurio 86, 176.
hausurus 207.
hebenum 176.
hebetis 191.
hedera 176, 194.
heicce 87.
heis 362.

helops 176.
helusa 143, 144.
helvaceus 144.
helvella 144.
helveolus 144.
helvus 144, 305.
hemo 71, 114, 305, 350.
her 305.
herba 142.
herctum 144.
Hercules 71.
here 87, 340.
hereditarius 221.
herei 87.
heri 66, 87, 340.
herus 144.
hesternus 66.
hi 80, 362.
hiare 447.
hibiscus 176.
hibus 361, 363.
hic 132, 361.
hiems 143, 144, 219, 305.
hillae 144.
hio 144.
hir 144, 305.
hira 144.
hircus 131.
hirudo 144.
hisco 144, 452.
Hister 176.
hoc 361.
hodie 361.
hodiernus 161.
holus 143, 144.
homicida 304.
homicidium 221.
homo 71, 143, 144, 334.
homullus 219.
honestas 207, 309.
honos 161, 309.
honus 177.
honustus 177.
hordeum 217.
horreo 104, 143, 455.
horresco 453.
horsum 361.
hortus 143.
horum 131, 362.
hosticapas 333.
hostis 142, 208.
huc 69, 73, 361.
huic 131, 363.
hujus 131.
humi 71, 114, 144, 468.
humilis 144, 305.
humus 292.
hunc 73.
Hydruntum 314.

i 471.
ibi 361.
ibus 363.
-icus 93.
ici 459.
id 361.
idem 209, 361.
Idus 94, 246, 296.
iei 361.
-iens 446.
-ier 473.
iero 462.
ieis 362.
igitur 191, 285.
ignarus 241.
ignis 73.
ignominia 212.
ii 465.
iisti 462.
ilicet 221.
ilignus 216.
illac 343.
ille 361.
illecebra 220.
illex 139.
illi (gen.) 363.
illicio 139.
illico 192, 285.
illinc 286.
illius 186, 362.
illo (dat.) 363.
illuc 73.
illustris 209.
im 361.
imago 93.
imaginifer 304.
imber 156, 296.
impedio 65, 148, 150, 208,
454.
impeirium 87.
impelimenta 150.
imus 366, 446.
in 158.
incido 85.
inciens 133.
incitare 133.
inclino 94, 135.
includus 94.
incola 140.
incolumis 71.
inde 62, 72, 149.
indicare 93, 147.
induperator 148.
infelix 186.
infensus 208.
inferior 366.
inferne 341.
inferus 71.
infestus 208.

- infirmus** 145, 366.
infra 71.
ingens 452.
ingenuus 218.
ingruo 154.
inicus 131.
inquam 130, 140, 164, 211, 447.
inquinus 128, 130, 140, 187.
inquirō 79.
inquit 448.
insece 73, 130, 140, 256.
insectio 130, 140.
inseriuntur 451.
insontem 473.
instauro 79.
instigare 94, 141, 163.
insulio, insilio, 63.
insulto 63.
intelleximus 464.
inter 158, 261.
interdiu 347.
interpres 151.
intrare 219.
inveterasco 453.
involverum 220.
ipse 361.
ipsius 362.
ipso (dat.) 363.
is 93, 361.
istā 344.
istarum 339.
iste 146.
isti 80, 344.
isti (gen.) 363.
istius 362.
isto (dat.) 363.
istus 361.
ita 361.
Italia 147.
iterum 66, 361.
itineris 304.
Itus 446, 465.
ium 361.
-ius 93.
ivi 465.

iacio 140, 251, 453.
jaculum 220.
iam 361.
janitricēs 116, 158, 171, 300.
Janus 447.
jeci 459, 460.
jecinis 303, 304.
jejunioris 304, 352.

jeccoris 304, 352.
jecur 95, 104, 130, 140, 171, 352.
jocus 251.
Jovem 347.
Jovi 170.
Jovis 87, 95, 296.
jubeo 449.
jubilo 208.
jubilum 96.
judex 191, 209.
judicis 191.
jugā 344.
jugare 455.
jugera 80, 87, 186.
juglans 186.
jugum 95, 127, 134, 171.
jumentum 213.
junctus 217.
juncus 73.
jungo 452.
junior 303.
juniperus 294.
junix 303.
Jupiter 206, 211, 346.
Juppiter 206.
jus 95, 171, 308.
jussi 209, 449.
jussus 207.
jutus 465.
juvencus 303, 304.
juvenior 303.
juvenis 191, 303.
juventus 191.
juvi 465.

Kaeso 54.
Kalendae 54, 125, 455.

labasco 453.
labi 241.
Labienus 293.
labium 153.
lābo 450.
labor 157, 450.
labrum 61, 156, 220.
lac 62, 211, 335.
lacer 212.
laccio 464.
lachrymas 177.
lacrima 60, 67, 149.
lacte 307.
lacus 139.
laedo 450.
laesus 207.
laevus 79, 97.

lambo 61, 153.
lamentum 211.
lampada 314.
lampadās 314.
lana 62, 168, 212, 215.
languo 61, 141.
lapi 295, 307.
lapsus 207.
laquear 139.
laqueus 139.
lares 61.
largior 454.
largus 116, 220.
lascivus 61.
latebra 220.
latera 211.
lateralis 220.
latere 150.
Latialis 220.
latibulum 220.
Latonas 345.
latrare 220.
lātus 115, 146, 211.
lātus 211.
laudari 473.
Laudicaes 345.
lautus 86, 188.
lavabrum 220.
lavacrum 220.
lavare 450, 455.
lavere 450, 455.
Laverna 79.
lavi 460, 465.
lavo 86, 156, 170, 187, 460.
laxus 61, 141, 212, 238.
lectiones 54.
legalis 220.
legamini 444.
legeremini 444.
legeris 190, 444.
legi 467.
legimini 293, 471.
legimur 444.
legimus 191.
legitimus 367.
legitur 190, 443.
lego 66, 156, 231, 450.
legor 444.
leguntur 443.
leigibus 80.
lenis 67, 206.
lentus 108.
leo 66, 156.
lepor 309.
lepōris 309.
lepōris 309.
lepos 161.
lepus 309.
letalis 220.

- Leucesie 80, 87.
 levir 149, 294.
 levirum 190.
 lēvis 87, 109, 145, 156,
 187, 196, 296.
 -lexi 462.
 liber 149, 196.
 libet 190.
 libido 210.
 libra 214.
 libum 211.
 licessit 464.
 licet 130.
 lictor 207.
 -lictus 140.
 lien 144, 213, 302.
 lignum 73.
 ligo 207.
 ligula 138, 145.
 limen 304.
 limpidae 152.
 limus 140, 212.
 linearis 220.
 lingo 138, 145.
 lingua 73, 133, 145.
 lino 451.
 linquere 130, 140, 156,
 460.
 liquere 139.
 liqui 458, 460.
 liquis 140.
 lis 212.
 litera 206.
 littera 206.
 littus 206.
 litus 206.
 locus 212.
 locutus 140, 247.
 lomentum 86, 188.
 longus 73, 250.
 loquax 140.
 loquor 140, 231, 247, 251,
 450.
 lora 96.
 lorica 169.
 lorum 169, 212.
 lotus 86, 188.
 Loucina 80.
 Loucios 87.
 lounen 80.
 lubet 72, 190.
 lubricus 153.
 lucem 156.
 Luceres 336.
 lucerna 94.
 lueo 130.
 luet 127.
 Lucienus 293.
 Lucina 80.
 lucis 128.
 Lucius 78, 87, 186.
 luerum 220.
 ludicer 220.
 ludo 450.
 lugeo 127.
 lui 467.
 -luis 73.
 lumen 80.
 luna 130.
 lungus 73.
 lupanar 220.
 Luperca 220.
 lupus 127.
 luridus 212.
 luteus 212.
 lutum 212.
 lux 211.
 luxare 156.
 luxus 73, 156, 162.
 macellum, 61.
 macer 246.
 machina 191.
 mactare 61.
 macte 61.
 macula 212.
 madefacio 472.
 madeo 61, 159, 455.
 madidus 61.
 magister 366.
 magnus 64, 302.
 majestas 311.
 major 85, 213, 309, 311.
 majus 309.
 mala 215.
 male 73.
 malignus 73.
 malim 470.
 malo 449.
 mālum 63.
 mālus 210.
 mālus 61, 150, 251.
 malva 62, 305.
 mancipium 191.
 mancipis 191.
 mancus 251.
 mando 215.
 mane 340.
 maneo 158, 251.
 manifestus 208, 217.
 mansi 462.
 manu 341.
 mantus (acc. pl.) 336.
 Marci por 294.
 mare 113.
 mare (abl.) 340.
 margo 155, 251.
 mari 341.
 maria 295.
 maritimus 85.
 Marullus 219.
 Maspiter 217.
 mater 63, 159, 300.
 materfamilias 345.
 materia 293.
 materiae 293.
 materies 293.
 maxilla 215.
 maximus 72, 190, 367.
 me 159, 360.
 me (dat.) 360.
 meare 135, 218.
 med 344, 360.
 medioximus 367.
 meditari 148.
 medius 65, 157, 194.
 mehe 360.
 mehercle 71.
 mei 360.
 meilia 205.
 meio 87, 145, 179, 452.
 mel 65, 159, 218, 305.
 melior 61, 105.
 mellis 305.
 membrum 214.
 memento 69, 106, 433,
 471.
 meminī 158, 159, 458.
 memor 159.
 memordi 455.
 memoris 190.
 menda 251.
 mendax 215.
 mens 66, 158, 246, 361.
 mensae (nom.) 345.
 mensae (dat.) 345.
 mensarum 339.
 mensis 67, 159, 162, 199,
 248.
 mensis 79, 345.
 mentior 158.
 mercennarius 216.
 merces 313.
 merere 66, 450.
 merges 251.
 meridionalis 368.
 merx 313.
 Messalla 219.
 metere 159, 451.
 metior 237, 250.
 Mezentius 171.
 mi (dat.) 360.
 mica 212.
 migrare 141.
 mihi 360.

- miles 165, 209, 334.
 mille 371.
 miluus 97.
 milvus 305.
 mina 71.
 Minerva 158, 161.
 minerrimus 366.
 mingo 143, 145, 452.
 minimus 366.
 minister 366.
 minor 366.
 minuo 93, 467.
 minus 366.
 mirari 159, 163.
 mirus 212.
 mis 359.
 misceo 159, 209, 452.
 miser 165.
 misi 205, 209.
 misus 205, 206, 207.
 mistus 209.
 mitesco 453.
 moderari 309.
 modestus 309.
 modi 309.
 modius 148.
 modò 341.
 modus 148, 249, 309.
 moenia 72, 88, 197.
 moineipieis 88.
 mola 73, 113, 159, 250.
 moles 150, 214.
 molestus 68, 150, 214, 310.
 molibus 210.
 moliri 214.
 mollis 102, 104, 155, 216.
 mollitiem 62.
 momentum 189.
 momordi 67, 455, 458.
 moneam 185.
 monemini 404.
 moneo 97, 158, 185, 246, 450, 454, 455, 467.
 Moneta 158.
 monete 185, 433.
 monile 68, 250.
 monimentum 190.
 monui 88, 187, 190, 467.
 monumentum 190.
 morbus 105.
 mordeo 104, 163, 212, 458.
 morior 68, 454.
 morosus 69.
 mors 155.
 morsus 104, 207.
 mortis 105.
 mortuus 474.
 mos 250, 309.
 motare 186, 190.
 motus 89, 465.
 moveo 89, 186.
 movi 465.
 nuccus 206.
 mucro 197.
 mucus 127, 206.
 mugio 453.
 mulceo 105, 159.
 mulgeo 138, 197.
 muliebris 214.
 mulier 159.
 mulsus 217.
 mulsus 103.
 multus 105.
 mungit 452.
 munia 88.
 muris 165.
 murmur 159.
 murra 218.
 mus 94, 159.
 Musa 78.
 musæus 188.
 Musarum 165.
 musca 94, 159.
 musivus 188.
 mutare 87, 89, 187, 190, 206.
 muttire 206.
 mutus 95.
 nactus 134, 251.
 nae 79.
 nanciscor 134, 158.
 nactus 217.
 nare 64, 241.
 nascor 211.
 nasus 261.
 natate 241.
 natrix 241.
 natus 135.
 naufragus 186.
 navare 455.
 navire 455.
 navis 63, 97, 158, 297, 348.
 ne 79, 146, 158.
 nebrundines 142, 144, 156.
 nebula 66, 156.
 nec 139.
 necare 467.
 necerim 361.
 necesse est 447.
 necopinus 139.
 necto 451.
 necubi 362.
 necui 467.
 necunde 362.
 nedum 361.
 nefarius 161.
 nefas 158, 161.
 nefrendes 142.
 nefrones 142, 144.
 nego 144.
 nemem 67, 158.
 nemo 143, 185.
 nemus 158.
 neo 186.
 nepos 65, 152, 189, 202.
 neptis 307.
 neque 139.
 nequeo 446.
 nervus 158.
 neu 88.
 neuter 88.
 neutiquam 88.
 neutri (gen.) 363.
 nevi 248.
 nex 66, 133, 246.
 nidor 94.
 nidus 165, 210.
 nihil 176, 335.
 nil 176.
 Nilus 83.
 ninguli 368.
 ninguis 145.
 ninguit 142, 145, 307, 452.
 nis 360.
 nisi 361.
 nitito 472.
 nivem 145.
 nivis 142, 158, 176, 337.
 nivit 450.
 nix 212, 307.
 nixi 211.
 nobis 342, 360.
 noceo 133, 246.
 noctium 307.
 nocturnus 307.
 nodus 211.
 noenum 185, 363.
 noli 471.
 nolim 470.
 nolo 449.
 nomen 71, 91, 250, 452, 465.
 nomenclator 304.
 nomenclator 71.
 nominis 71, 190.
 non 368.
 nonageni 368.
 nonaginta 370.
 noncuplus 368.
 nongenti 219.
 noningenti 371.
 nonus 110, 187, 372.

- nos 68, 158, 354, 360.
 nosco 68, 211.
 noster 361, 366.
 nostrorum (gen. pron.) 360.
 nostrum 360.
 nota 68, 452.
 notus 68, 465.
 novem 87, 110, 170, 186, 370.
 noveni 219, 368.
 novi 465.
 novicius 158.
 novus 88, 170, 186.
 nox 73, 127, 211, 250.
 noxa 133.
 nubes 310.
 nudius 161.
 nui 467.
 nullius 362.
 nullus 185.
 Numa 158.
 numeratum (gen.) 339.
 numerus 71, 73, 158, 294.
 numiclator 304.
 nummum 339.
 nunc 94, 132, 158.
 nuncupo 72.
 nundinae 88, 186, 347.
 nuo 158.
 nuper 186.
 nurus 158, 165, 212, 261.
 nutricis 221.
 nutrio 454.

 ob 153, 441.
 oblĕgmina 73.
 oblevi 465.
 obliquus 140.
 oblitus 465.
 oboedio 88.
 obscaenus 79, 162, 202.
 occidi 457.
 oculo 125.
 occultus 473.
 occupo 63, 191.
 occurri 457.
 occurro 209.
 ocior 68, 241.
 octavus 111, 188, 371, 372.
 octingenti 371.
 octo 67, 332, 370.
 octoginta 370.
 octuaginta 370.
 octussis 367.
 oculus 128, 140, 194, 247.
 odi 247, 460.
 odium 247.
 odor 67, 148, 150, 247.
 oenus 79, 88, 158.
 oesus 88.
 offendix 66, 156, 256.
 offero 209.
 officio 209.
 officina 209.
 oina 88.
 oinom 368.
 oinvorsei 79, 368.
 olea 188, 190.
 oleo 455.
 olere 67, 148, 150, 247.
 oleum 157.
 olim 361.
 oliva 157, 188.
 olla 86.
 ollus 361.
 olo 231, 450.
 oloes 341, 344, 361.
 omittere 214.
 oncare 73.
 opes 156, 250.
 opilio 89, 187, 190.
 oppido 148.
 oppidum (gen.) 339.
 oppidum 148, 152.
 oppono 209.
 optimus 191, 250, 284, 367.
 optimum 191.
 opulentus 68.
 oquolto 125.
 orbus 68, 156.
 orcus 250.
 ordo 210.
 oricilla 86, 188.
 origa 86.
 orior 67, 113, 157, 247, 454.
 ornus 218.
 orum 86.
 os 68, 86.
 osculum 86, 188.
 ospicor 86.
 oesu 314.
 ostendo 214, 367.
 ostium 86.
 ovare 87, 186.
 ove 339.
 ovem 348.
 ovis 88, 139, 187, 251.
 ovum 68.
 paastores 205.
 pabulum 220, 241, 465.
 pacis 64, 241.
 paciscor 150, 241, 453.
 paenula 191.
 pago 231, 450.
 Palatualis 220.
 palatuar 220.
 palea 62, 150.
 Pales 220, 251.
 palma 61, 70, 150, 302.
 palpare 201.
 palpebra 220.
 palpetra 220.
 palpito 62.
 pĕlus 152.
 pĕlus 150, 215.
 palustris 208.
 pando 215.
 pango 150, 241, 452.
 panis 241, 296.
 pannus 152, 184.
 panxi 464.
 papaver 152, 473.
 Papirius 161.
 Papisius 161.
 parare 454.
 parcus 203.
 parentes 113.
 pareo 450.
 parĕre 454.
 paricidas 292, 333.
 paries 151, 334.
 Parilia 220.
 pario 190, 453, 454.
 parricidā 63, 333.
 pars 116, 152, 251, 295, 313.
 parsi 464.
 parsus 207.
 partem 348.
 particeps 63.
 partim 348.
 partium 313.
 parum 163.
 parumper 209, 285.
 parus 201.
 parvulus 191.
 pasco 452.
 passum 338.
 pastor 241.
 pater 70, 147, 150, 300, 335.
 pater 152, 215.
 paterfamilias 345.
 paternus 293.
 patibulum 152.
 patina 152.
 patior 108, 152.
 patrare 152.
 patrem 300.

- patri 103.
 patris 300, 301.
 patrius 178.
 patruus 189.
 patulus 71.
 paucus 79, 150, 294.
 Paula 86.
 paullum 79.
 paullus 215.
 pauper 79, 150.
 paveo 86, 152, 187, 453, 460.
 pavesco 453.
 pavi 241, 460, 461.
 pax 150.
 paxillus 215.
 peccare 208.
 pecoris 314.
 pecto 152, 451.
 pecua 313.
 pecudis 314.
 pecunia 216.
 pecus 131, 313.
 pecūs 313.
 pede 63.
 pedem 112.
 pedes 112.
 pedēs 336.
 pedester 66.
 pedestris 208.
 pedica 148.
 pedis 249.
 pedisequus 131.
 pegi 459, 460.
 pejero 218, 284.
 peior 87, 218.
 pelagus 336.
 pellax 139.
 pellis 65, 150, 296.
 pello 101, 150, 451.
 pelvis 150, 218, 305.
 pendo 450.
 penna 65, 147, 215.
 penu 314.
 penuria 153.
 penus 153.
 pepedi 455.
 pependi 455, 459.
 peperci 455, 464.
 peperii 190, 455.
 pepigi 455, 459, 464.
 pepuli 458.
 pequnia 131.
 per 150, 441.
 percello 216.
 perculus 103.
 percussai 206.
 perdo 150.
 peregre 340.
 peregri 340.
 perendie 368.
 perfinēs 434.
 peristromae 314.
 peritus 151.
 perna 151, 217.
 pernices (gen.) 338.
 pernicii 338.
 pernix 151.
 perperam 361.
 perpeti 191.
 perplovere 187.
 pes 208, 211.
 Pesceniaes 345.
 pesna 65.
 pessimus 206, 366.
 pessulus 191.
 pessum 208.
 petivi 454.
 peto 65, 130, 147, 150, 450.
 Philippum (gen.) 339.
 pictus 134, 153.
 pietas 190.
 pignus 150.
 pilare 201, 213, 455.
 pileus 151.
 pilumnus 336.
 pingo 134, 452.
 pinguis 73, 108, 145, 296.
 pinna 215.
 pinso 201.
 pinsum 207.
 pinus 152.
 pipilare 152.
 Pisaurese 336.
 piscis 215.
 pistor 201, 207, 217.
 pisum 152.
 pituita 94, 152.
 pix 152, 194.
 plaga 63, 152, 240.
 planca 62, 152, 216.
 plango 151, 240.
 planus 115, 152, 216.
 plaudo 86, 450.
 plaustra 86.
 Plautus 86.
 plebes 151, 297, 310.
 plebi (gen.) 338.
 plebs 211.
 plecto 152.
 pleibes 80.
 plenus 67, 151, 248, 440.
 -pleo 250, 445.
 pleores 97.
 plexi 462.
 plexus 66.
 plico 152, 456.
 plisima 366.
 plodo 86.
 ploera 88.
 ploerime 366.
 ploirume 470.
 plorare 69, 80, 250.
 plostra 86.
 Plotius 86.
 plumbum 153, 213.
 pluī 151, 187, 467.
 pluī 467.
 plures 97, 152.
 plurimus 366.
 plusima 366.
 poculum 68, 151, 243.
 poena 88, 129.
 Poeni 72, 88.
 poenire 88.
 Pola 86.
 polenta 301.
 polio 153, 367.
 pollen 218, 301.
 pollere 251.
 pollicitus 447.
 pollis 301.
 pollubrum 220.
 Polluces 80.
 pollutus 189.
 Pollux 80.
 Polouces 80.
 pomerium 367.
 pondo 309.
 pondus 309.
 pone 213, 341.
 ponebāt 469.
 pons 109, 163.
 pontifex 191.
 pontufex 191.
 popa 128, 221.
 popina 221.
 Poplicola 71, 153.
 poploe 71, 336.
 poposci 455, 459.
 populoi (dat.) 343.
 populus 71, 153.
 porcus 152.
 porrum 102, 104, 151, 216.
 porta 103, 105, 151.
 portio 152, 251.
 portus 151.
 pos 367.
 posca 151.
 posco 209, 217, 452.
 positus 153, 246, 468.
 posmeridianus 367.
 posse 209.
 posseus 207.
 possestrix 208.
 possum 285, 448.
 post 213, 367.

- posterior (n.) 311.
 posterus 366.
 posticus 131, 208.
 postidea 208, 344.
 postremus 366.
 postridie 340.
 postulo 220.
 postumus 366.
 posui 467.
 potare 243.
 potens 150, 448.
 potestas 207.
 potin 448.
 potio 243.
 potiri 448, 454.
 potis 67, 150.
 potitur 448, 454.
 poter 243.
 potui 448.
 potus 68, 151, 153, 243.
 poter 294.
 prae 79, 150.
 praebeo 176.
 praeco 140.
 praeda 142, 148.
 praedat 341.
 praefiscine 154, 340.
 praegnans 313.
 praegnatis 313.
 praes 149.
 praesagus 63, 163.
 praesens 334, 350, 448.
 praesertim 104.
 praestigiae 220.
 precor 67, 452.
 prehendo 142, 176, 248, 450.
 premo 217, 460.
 premo 176.
 pressi 217.
 pretium 151.
 primus 366, 372.
 prior 151.
 prior (neut.) 311.
 priscus 83, 135, 141, 151, 372.
 prismo 132.
 pristinus 372.
 privicloes 341.
 pro 68, 152, 247.
 probeo 176.
 procella 125.
 proclive 340.
 proclivi 340.
 procul 103.
 proeus 67, 452.
 prodambulare 344.
 prodest 344.
 profecto 285.
 prohibeo 176.
 prohibesso 464.
 prolixus 139.
 promello 451.
 propago 150.
 prope 128, 139, 221.
 properus 150.
 propincus 131.
 prosa 217.
 prospices 434.
 proximus 128, 139, 221, 367.
 pruna 150.
 prurire 150.
 Publicola 153.
 publicus 71, 153.
 pucandod 54.
 puer 294.
 puerosco 453.
 puere 294, 335.
 pugil 150.
 pugna 150.
 pugnus 150.
 pulex 201.
 pullus (young) 219, 301.
 pullus (pure) 219.
 pullus (black) 150, 190, 219.
 pulmo 152.
 puls 219.
 pulsus 103.
 pulvinaris 220.
 pulvis 218.
 pulvisculus 310.
 pumex 203.
 pumilus 213.
 pungo 150, 452.
 Punicus 72.
 punio 88, 454.
 punxi 464.
 pupugi 455, 459, 464.
 purime 366.
 purus 94.
 puteo 95, 150.
 putillus 219.
 putris 150.
 putus 219.
 qolunt 131.
 quadriduum 368.
 quadriennium 368.
 quadriga 368.
 quadringenti 371.
 quadruplus 367.
 quadrussis 367.
 quae 362.
 quaero 79, 129, 140.
 quaesti 349.
 quaestuis 349.
 quaesumus 72.
 quairatis 85.
 qualis 362.
 qualus 215.
 quam 362.
 quartus 116, 129, 140, 369, 372.
 quasillus 215.
 quassi 209.
 quater 192, 372.
 quatio 140.
 quattuor 129, 251, 336, 369.
 -que 65, 121, 128, 146, 285.
 quei 362.
 queo 133, 446.
 quercus 131, 139.
 querella 214.
 querimonia 214.
 quernus 218.
 querquedula 140.
 querquerus 131, 143.
 querquetulanus 139.
 ques 362.
 qui 80.
 qui (adv.) 341.
 quia 361.
 quibus 361.
 quidem 361.
 quies 124, 203, 293.
 quiesco 202, 453.
 quii 465.
 Quinctius 139, 369.
 quingenti 371.
 quini 372.
 quinquaginta 239.
 quinque 73, 128, 139, 221, 369.
 quintus 139, 217, 369.
 quiris 140.
 Quirites 140.
 quirquir 162.
 quis 118, 121, 128, 361.
 quisque 128.
 quisequillae 140, 162, 204.
 quitus 465.
 quium 363.
 quivi 465.
 quo 73, 123, 129.
 quoi 131.
 quoei 363.
 quouis 131, 363.
 quom 131, 362.
 quondam 72.
 quoniam 131, 135, 218.
 quoqirca 131.
 quorum 131.
 quot 129, 362.

- quoties 219.
 quotus 362.
- racemus 212.
 radius 157.
 radix 115, 157, 212, 241,
 450.
 rallum 215.
 Ramnes 336.
 ramus 447.
 rapio 62, 151, 157, 467.
 raptus 467.
 rapui 467.
 rasimus 207.
 rastrum 208.
 ratio 238.
 ratis 251.
 rätus 238, 446, 473.
 reccidi 284, 457.
 reddidi 456.
 redimo 72.
 redit 442.
 reditus 93, 344.
 reduvia 145.
 rege 433, 471.
 regimus 72.
 regina 306.
 regito 433.
 regnum 73, 301.
 rego 66, 138, 249.
 regula 249.
 regunto 433.
 rei 186.
 rei 338.
 rei 338, 339.
 reice 454.
 relictus 93, 130.
 reliqui 468.
 reliquus 130, 134.
 reluo 156.
 remus 67, 157, 251.
 repente 157.
 repo 152, 212, 450.
 repperi 457.
 requies 313.
 reri 238.
 res 219, 293, 297, 334.
 rex 211.
 rēxi 464.
 rideo 449.
 ridiculus 220.
 rima 213.
 ringi 213.
 robigo 80, 89, 116.
 robur 68, 304.
 robustus 304.
 rodo 241, 450.
 rogan 210.
- Roma 212.
 Romanoī (dat.) 339, 343.
 ros 69, 308.
 rosa 68.
 rostrum 208.
 ruber 94, 149, 196.
 rubigo 89.
 ructare 196.
 rūdere 449, 450.
 rufus 80, 149.
 rugio 157, 453.
 rui 467.
 rumentum 213.
 Rumo 94, 212.
 rumpo 452.
 ruo 187, 212.
 rure 340.
 russum 217.
 russus 206.
 rusum 217.
 rutilus 149.
- Sabini 215.
 sabulo 201.
 sabulum 201.
 sacerdos 236.
 saeculum 71, 214.
 saeculum 71, 214.
 saevio 454.
 sagire 163.
 sal 61, 164, 305.
 sale 295, 305.
 salebra 220.
 salio 62, 101, 164, 453.
 sallere 216.
 salsus 216.
 saltus 164, 204.
 saluber 214.
 salui 454, 467.
 salum 60, 164, 170, 204.
 salus 188.
 salutaris 220.
 salvare 188.
 salve 188.
 salvere 188.
 salvus 188, 218.
 Samnium 215, 284.
 sanguen 218, 304, 334.
 sanguis 218, 304, 334.
 sanguisuga 304.
 sanus 250.
 sapio 153, 467.
 sapo 153.
 sapor 60.
 sapēa 361.
 sapui 467.
 sarcio 212.
- sario 453.
 sarmentum 157.
 sarpo 151, 157, 163, 172.
 sas 361.
 satin 210.
 satis 164, 258.
 satur 164, 258, 294.
 satura 190.
 satus 70, 236, 237.
 saucius 79.
 savium 170, 204.
 saxum 132, 249.
 scabellum 153.
 scaber 203.
 scabi 459, 460.
 scabies 162.
 scabo 124, 231, 450, 460.
 Scaevola 79.
 scaevus 79, 97.
 scala 217.
 scalpo 126.
 scalprum 220.
 scando 126.
 scandula 126.
 scansum 207.
 scapula 153, 241.
 scapus 64, 163, 241.
 scatebra 220.
 scato 231, 450.
 scelestus 207.
 scelus 126.
 scezna 202.
 scicidi 455, 468.
 scidi 148.
 scilicet 221.
 scindo 148, 163, 452.
 scintilla 203.
 scisco 453.
 scissus 207.
 scitus 465.
 scivi 465.
 scelis 147.
 scobs 124.
 scopae 241.
 scopulus 190.
 scoruscus 202.
 scribo 205.
 scriptus 205, 207.
 scripse 462.
 scurra 124, 218.
 scutum 94, 124, 162, 202.
 se 170, 204.
 sebum 153.
 secerno 192, 465.
 seco 140, 249, 450, 467.
 sectari 139.
 sector 130.
 sectus 467.
 secui 467.

- secundus 139, 371.
 sed (conj.) 344.
 sed 360.
 sedecim 368.
 sedeo 65, 148, 149, 460.
 sedes 148, 309.
 sedi 460, 468.
 sedibus 210.
 sedigitus 368.
 sedimus 457, 459.
 segetis 191.
 segmen 73.
 segmentum 303.
 segnia 73, 165.
 sejugis 368.
 sella 65, 215.
 semel 164, 305, 368, 372.
 semen 67, 237, 465.
 semestris 368.
 semi 66, 159, 163, 172, 248.
 semplotia 86.
 semo 71, 114, 143.
 semper 111, 285.
 senati (gen.) 349.
 senatu 339.
 senatus 349.
 senatuos 337, 349.
 Seneca 307.
 senecio 307.
 senecis 307.
 senex 65, 158, 163, 307.
 senexter 368.
 seni 368.
 senium 65, 138, 163, 307.
 sensus 207.
 septem 91, 110, 204, 257, 369, 372.
 septemplus 304.
 septeni 368.
 septimanus 304.
 septimus 110, 372.
 septingenti 73, 112, 219, 370.
 septuaginta 370.
 sepulcrum 177, 220.
 sepultus 103.
 sequax 139.
 sequere 68, 471.
 sequi 163.
 sequor 65, 68, 128.
 sera 66, 164, 170.
 serenus 204, 310.
 serere 467.
 serimus 163, 237, 445.
 sero 170, 175, 204, 450.
 serpo 65, 152, 163, 172.
 serui 467.
 serum 157.
 servio 454.
 servitium 294.
 sescunx 368.
 sessus 235.
 sestertium (gen.) 339.
 Seatus 209.
 seu 87.
 severam 466.
 severo 466.
 severus 164.
 sevi 237, 465.
 sevimus 466.
 sevir 368.
 sevissem 466.
 sevistis 466.
 sex 65, 163, 170, 204, 369.
 Sextius 209.
 sextus 201, 371.
 si 79, 204, 361, 468.
 sibi 360.
 sibus 153.
 sic 132, 361.
 sica 132, 140, 249.
 siccus 209.
 sido 165, 209, 450.
 siem 238, 447, 448, 460, 470.
 sies 67.
 siet 469.
 signum 73, 83.
 siliqua 140.
 siluæ 218.
 silva 190, 218, 305.
 silvia 218.
 sim 460, 470.
 simila 93.
 similago 93.
 similis 72.
 simplex 164, 172, 305, 368.
 simul 159, 164, 368, 372.
 simulacrum 147, 220.
 simulo 72.
 simus 93, 238, 448, 470.
 sine 360.
 singuli 71, 219, 368, 371.
 singulteo 454.
 sinistimus 367.
 sino 451.
 sins 434.
 sis 361.
 sistimus 239, 445.
 sisto 445, 450.
 sitio 454.
 socer 133, 204, 258.
 socius 68, 128, 129, 139.
 socrus 258.
 sodalis 149, 170, 204.
 sodes 204.
 sol 305, 335.
 solari 188.
 solere 188.
 solium 149.
 solus 362.
 solinunt 451.
 sollemnis 189.
 sollistimus 367.
 sollus 68, 164, 188, 218, 305.
 soluit 218.
 solus 188, 218.
 solutus 95.
 solvo 97, 190, 218, 305.
 somnus 147, 204, 215, 293-
 sona 55.
 sonare 450, 454.
 sonere 450.
 sons 164, 307, 350.
 sontem 473.
 sonui 454.
 sopio 455.
 sopor 147, 151, 215.
 sorbeo 156, 212.
 sordidus 170, 204.
 sorex 164, 170.
 soror 170, 204, 297, 300.
 sortis 104.
 sos 361.
 soveis 88.
 sovo 89.
 sovos 170, 186, 361.
 sparsi 217.
 spatium 163, 203, 237.
 -specere 200, 203, 414.
 spepondi 455.
 speres 297.
 sperno 204, 297, 446, 451.
 spes 237, 297.
 spissus 206.
 splen 144, 213.
 spolia 203.
 spondeo 163, 458.
 spopondi 455, 458.
 sporta 163.
 sportula 103, 151.
 spuma 203.
 spuio 151, 195, 203.
 squarrosus 140.
 squatina 141.
 sta 471.
 stabulum 149, 220.
 stamen 63, 239.
 stamino 471.
 stare 63, 239.
 starem 470.
 statim 239, 348.
 statio 239.
 stato 471.
 stator 63, 239.
 statumen 303.

- statuo 303, 404.
 status 70, 235, 239, 446,
 473.
 statuunt 442.
 stella 65, 162, 203, 219.
 stemus 470.
 stercus 139, 189, 203.
 sterno 201, 218, 445, 451.
 sternuo 199, 201, 445, 451,
 467.
 sternutare 445.
 sterquilinium 139, 189.
 sterto 450.
 steti 455, 468.
 stetimus 239, 458.
 stetero 466.
 steterunt 466.
 stilus 163, 213.
 stimulus 163, 213.
 stinctus 141.
 stinguo 141.
 stipare 163.
 stipes 163.
 stiti 455.
 stilaria 213.
 stilis 147, 212.
 stilocus 212.
 sto 185.
 storax 73.
 storea 68, 113.
 strangulare 163.
 stratus 115, 163, 234.
 strideo 449.
 stridēre 450.
 stridi 459.
 strido 449.
 strigilis 163, 203.
 stringo 220.
 struo 235.
 studium 203.
 stupa 206.
 stuppa 206.
 sturnus 203.
 suad 361.
 suadeo 147, 170, 204, 361,
 450.
 suasimus 207.
 suasum 170, 204.
 suavis 147, 164, 170, 204.
 suavium 170.
 sub 94, 153.
 sublimis 304.
 subrupio 191.
 subtel 191.
 subtilis 67, 191.
 subus 296.
 succus 206.
 sucus 206.
 sudor 148, 170, 204.
 sudum 80, 163.
 suesco 149, 164, 170, 204.
 suffio 97, 149.
 suggero 209.
 sui 360.
 Sulevia 218.
 Sulva 190.
 Sulvia 218.
 sum 441, 447.
 summus 213, 366.
 sumo 460.
 sumpti (gen.) 349.
 sumus 71, 72, 190, 223,
 447.
 sunt 106, 447.
 suo 164.
 super 94, 151, 441.
 supercilium 132, 249.
 superior 366.
 superne 341.
 supremus 366.
 surgere 284.
 surpui 284.
 surripio 191.
 sus 94, 163, 296, 367.
 suspicio 249.
 suspicio 67, 249.
 susurrus 157, 164.
 sutor 164.
 suus 89, 170, 172, 186,
 361.
 suximus 464.
 tabeo 450.
 tabes 146.
 tacen 210.
 tago 146, 213, 231, 450.
 talentum 190.
 talis 361.
 talpa 203.
 talus 215.
 tam 146, 361.
 tame 361.
 tango 62, 146, 213.
 tantus 361.
 tarpessita 55.
 taurus 79, 139, 146.
 taxillus 215.
 te 211, 360.
 -te 146.
 teba 208.
 tectus 73.
 Tecumessa 71.
 ted 344, 360.
 tēgmen 73.
 tego 65, 203, 246, 249,
 450.
 tegula 249.
 tela 67, 191.
 temno 451, 460.
 temo 213.
 temperi 309, 340.
 temperies 309.
 tempestas 309.
 temporis 309.
 tempto 217.
 tempus 309.
 temulentus 214.
 tendo 146.
 tenebrae 214.
 tenere 450.
 tenor 309.
 tensus 207.
 tento 217.
 tentus 92, 207, 473.
 tenuia 98.
 tenuis 106, 114, 146, 296.
 tenuus 309.
 ter 192, 372.
 terebra 220.
 tergēre 192, 203, 450.
 tergus 142.
 termen 302.
 terminus 65, 146, 293,
 302, 350.
 termo 70, 302, 350.
 terni 372.
 tero 65, 146, 231, 405.
 terra 104, 146.
 terrae (dat.) 345.
 terrai (gen.) 345.
 terreo 146.
 terripuvium 189.
 tertius 146, 192, 257, 372.
 tertus 192.
 Tesiphon 201.
 tesqua 146.
 testamentum 303.
 testudo 216.
 tetendi 455, 459.
 tetigi 284, 455, 457, 459.
 tetini 455, 458.
 tetondisti 463.
 tetuli 455, 458.
 texo 262.
 tibi 211, 360.
 tibia 203.
 tignum 73, 125.
 tilia 201.
 tinctus 141.
 tinguo 141, 146.
 tis 359.
 Tities 336.
 -to 69.
 toga 246.
 Tolemaid 201.
 tolerare 146.
 tollo 146, 218, 451.

- tolutum 218.
 tonare 67, 163, 203.
 tondeo 217, 458.
 tongere 73.
 tongitio 73.
 tonstrix 208, 218.
 topper 209, 219, 361.
 -tor 69.
 torculum 130, 139.
 torqueo 124, 130, 139.
 torreo 104, 146, 207, 455.
 tortus 130, 139.
 torus 68, 113.
 torvus 136, 146.
 tostus 104, 207, 217.
 tot 146, 361, 441.
 totae (gen.) 363.
 toti (gen.) 363.
 totidem 441.
 totius 362.
 toto (dat.) 363.
 totondi 455, 458.
 totus 147.
 tovos 170, 186, 203, 361.
 trabes 313.
 trabs 211, 313.
 tranquillus 124, 130, 203.
 trans 219.
 transennae 215.
 traxe 462.
 tredecim 209.
 tremesco 453.
 tremo 146, 231.
 tres 146, 185, 369.
 tribulum 220.
 tricae 139, 146.
 triciens 372.
 trico 139.
 triduum 368.
 triens 112, 372.
 trigessis 367.
 trigintā 336, 370.
 trillix 140.
 trini 372.
 trio 203.
 triquetrus 140.
 tristis 296.
 trucidare 221.
 trudo 146.
 tu 146, 359.
 tui 360.
 tuli 146.
 tum 146, 361.
 tumeo 72, 95.
 tumere 94, 146.
 tumet 190.
 tumulus 146.
 tunc 132.
 tundo 203, 452.
- turba 142, 146, 153.
 turbinēs 336.
 tardus 203, 217.
 turgeo 142, 203.
 turrim 348.
 Turscus 217.
 -tus 147.
 tus 308.
 Tuscus 217.
 tutudi 455, 459, 468.
 tutudisti 463.
 tuus 88, 170, 186, 361.
- uber 149, 208, 303, 304.
 ubi 340.
 udus 149, 208.
 ulcus 189.
 uligo 149.
 Ulixes 150.
 ullae (gen.) 363.
 ullus 219.
 ulna 73, 219, 248, 302.
 ula 361.
 ultra 361.
 ultimus 366.
 ultus 217.
 ululo 73.
 umbilicus 68, 156.
 umbo 73.
 umerus 71, 73, 294.
 unae (gen.) 363.
 uncare 73.
 uncus 68, 72, 125.
 unctus 141.
 unda 148, 215.
 undeceni 372.
 undecim 370.
 undeviginti 370.
 unguen 303.
 unguentum 303.
 unguere 141.
 unguis 72, 143, 145, 296.
 ungula 145.
 unius 362.
 unus 80, 158, 368.
 upilio 89, 130, 187, 190, 251.
 upupa 151, 250.
 urbs 211.
 urgeo 169, 189.
 urna 80, 217, 218.
 uro 80, 450.
 ursus 102, 104, 217.
 urvus 217.
 usio 334.
 ussimus 207.
 ut 441.
 uter 118, 126, 129, 362.
- uterum 294.
 utrae (gen.) 363.
 utrasque 345.
 utrum 294.
 uva 145.
- vacivus 189.
 vacuus 189.
 vadiis 149.
 vado 405, 450.
 vae 166.
 vagio 63.
 vagus 168.
 Valeri 284.
 vallis 63, 169.
 vallus 63, 169, 172, 183.
 valvae 188.
 vanus 189.
 vapor 61, 124.
 vappa 61.
 Varro 165.
 vas 251.
 vastus 208.
 -ve 146, 285.
 vectum 205.
 vegeo 169, 197.
 vehe 471.
 vehemens 176, 214.
 vehite 433, 471.
 vehito 471.
 vehitote 471.
 veho 143, 205, 450.
 vehunto 471.
 veivos 80.
 vel 433, 449.
 Velabrum 149, 220.
 Velia 165.
 velim 470.
 velis 189.
 velle 189, 216, 449, 467, 472.
 vellem 189.
 vello 189, 451.
 vellus 62, 66, 168, 212.
 velum 214.
 vemens 176.
 veneficium 221.
 veni 460.
 vēnimus 457, 459.
 venio 106, 135, 218, 453, 460.
 venter 141.
 ventum 217.
 ventus 66, 186, 238.
 -ventus 91.
 venum 190, 213.
 ver 167, 168, 305.
 verbera 190.

- verbum 66, 169, 190.
 vereor 157, 169.
 vergo 66, 169, 189, 450.
 vermen 217.
 vermis 190.
 verna 161, 169, 302.
 vernus 302.
 verrere 96, 157, 216.
 verres 216.
 verro 66, 97.
 verruca 216.
 versum 217.
 versus 207.
 vertebra 220.
 vertex 189.
 verto 190.
 Vertumnus 302.
 veru 137.
 vesci 190.
 vespa 190.
 vesper 66, 168, 173.
 vespere 340.
 vesperi 340.
 Vesta 161, 169, 173.
 vester 190, 361, 366.
 vestibulum 220.
 vestio 454.
 vestis 66, 162, 168, 172, 207.
 vestrum 360.
 vetare 450.
 veter 162, 302, 309.
 veterinus 147.
 veterinus 161.
 veterrimus 367.
 vetus 65, 169, 302, 309.
 vexillum 214.
 via 185.
 vias 345.
 vicem 93.
 viceni 368.
 vices 169.
 vicesimus 207, 367, 370, 372.
 vici 459.
 viciens 133, 372.
 victrix 300.
 vicus 88, 133, 169.
 videlicet 221.
 viden 210.
 video 93, 167, 169, 460.
 videram 461, 463.
 vidēre (3 pl.) 461.
 viderim 461, 463.
 videro 461, 463, 469.
 viderunt 461.
 vidi 458, 460, 463, 468.
 vidimus 210, 468.
 vidisse 461, 463.
 vidissem 461, 463.
 vidisti 461, 463, 468.
 vidistis 461, 468.
 viduus 93, 149, 170.
 viere 93.
 vigeo 169.
 vigessis 367.
 viginti 112, 133, 168, 370.
 vilis 213.
 villa 215.
 vimen 93.
 vinclum 71, 220.
 vinco 169.
 vinculum 71.
 vinum 88, 133, 169.
 viola 93, 169.
 violare 455.
 violentus 135, 455.
 vir 294.
 virago 145.
 vire (nom. pl.) 336.
 vires 309.
 virgo 145.
 virosus 93.
 virus 93, 165, 336.
 vis 93, 135, 169, 295, 309.
 vis (volo) 449.
 viscus 60, 94, 162.
 visio 451.
 visus 207.
 vitex 93, 167.
 vitis 93.
 vitulus 71, 147.
 vivere 472.
 vivus 141.
 vixdum 361.
 vobis 342, 360.
 vocatio 189.
 vocibus 307, 342.
 vocis 128, 129, 140, 346.
 vocivus 189.
 vocuus 189.
 vola 135.
 volare 136, 141.
 Volcanus 169.
 volema 135.
 volnus 167, 189.
 volo 168, 189.
 volt 71, 189, 449.
 voltis 303, 449.
 volucris 306.
 volui 467.
 Voluminus 302.
 volumus 71, 72, 189, 303.
 volup 71, 151, 153, 169.
 voluptas 151, 169, 189, 197.
 voluntas 221.
 vomer 310.
 volvo 97, 157, 169, 188, 305.
 vomis 214, 310.
 vomitus 70.
 vomo 159, 189.
 vorago 216.
 vorare 67, 113, 136.
 vortex 189.
 -vorus 72, 141.
 vos 360.
 vestrorum (gen. pron.) 360.
 voveo 135.
 vovi 465.
 vox 194, 346.
 vulgaris 220.
 vulgus 336.
 vulpes 169.
 vulsus 103.
 vulva 137, 221.
 zabolus 171.
 zaconus 171.

THE END.

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